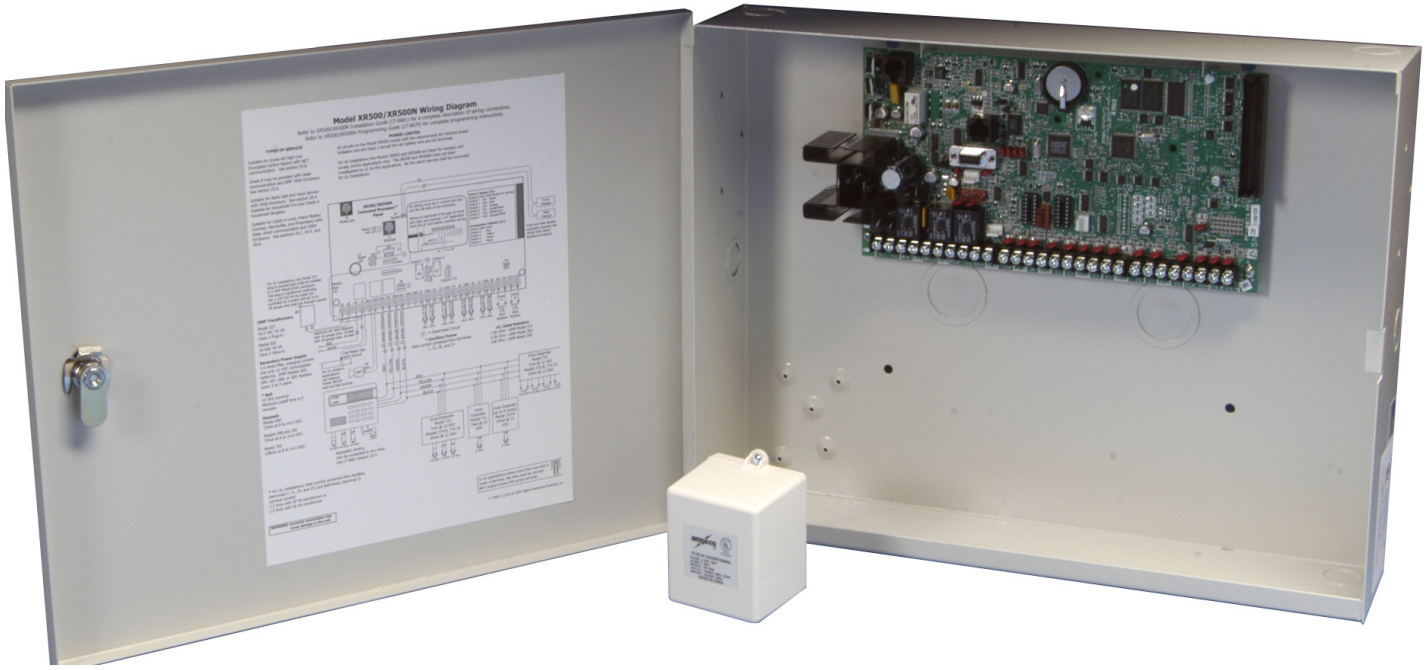
INSTALLATION GUIDE



XR500 SERIES
COMMAND PROCESSOR™ PANEL

Digital Monitoring Products

MODEL XR500, XR500N, XR500E
COMMAND PROCESSOR
INSTALLATION GUIDE

FCC NOTICE

This equipment generates and uses radio frequency energy and, if not installed and used properly in strict accordance with the manufacturer's instructions, may cause interference with radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specification in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the installer is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna

Relocate the computer with respect to the receiver

Move the computer away from the receiver

Plug the compute into a different outlet so that computer and receiver are on different branch circuits

If necessary, the installer should consult the dealer or an experienced radio/television technician for additional suggestions. The installer may find the following booklet, prepared by the Federal Communications Commission, helpful:

"How to identify and Resolve Radio-TV Interference Problems."

This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402

Stock No. 004-000-00345-4

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This information is subject to change without notice.

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Product Specifications

1.1 Power Supply

Transformer Input: Model 327, plug-in — Primary input: 120 VAC, 60 Hz, Secondary output: 16.5 VAC 50 VA
Model 322, wire-in — Primary input: 120 VAC, 60 Hz, Secondary output: 16 VAC 56 VA

Standby Battery: 12 VDC, 1.0 Amps Max. charging current
Models 365, 366, 367, 368, or 369
Replace every 3 to 5 years

***** Auxiliary: 12 VDC output at 1.5 Amp Max

***** Bell Output: 12 VDC at 1.5 Amp Max

Note: The combined Auxiliary and Bell outputs total cannot exceed 3 Amps with a 50 VA or 56 VA Transformer.
All circuits are inherent Power Limited except the red battery wire and AC terminal.

*** For UL installations, the total current combined from Auxiliary and Bell Power cannot exceed:**
1.3 Amps with a 50 VA transformer, 1.0 Amp Max for Auxiliary Power
1.9 Amps with a 56 VA transformer, 1.0 Amp Max for Auxiliary Power and 1.5 Amp Max for Bell

1.2 Communication

Built-in network communication to DMP Model SCS-1R Receivers (XR500N/XR500E only)
Built-in encrypted communication to iCOM-E™ Encrypted Network Alarm Router (XR500E only)
Built-in dialer communication to DMP Model SCS-1R Receivers
Built-in Contact ID communication to non-DMP receivers
Optional 893A Dual Phone Line Module with phone line supervision
Can operate as a local panel

1.3 Panel Zones

Eight 1k Ohm EOL burglary zones (zones 1 to 8)
Two 3.3k Ohm EOL powered zone with reset (zones 9 and 10)

1.4 Keypad Bus

You can connect up to 16 of the following supervised keypads and expansion modules to the keypad bus:

- Alphanumeric keypads
- Single-zone detectors
- Four- and/or single-zone expansion modules
- Access control modules

1.5 LX-Bus™

You can connect the following devices to the LX-Bus™ provided on the panel or by the DMP 481, 462N, 462P and 472 Interface Cards up to the maximum number of LX-Bus™ addresses. See Accessory Devices in section 3.4.

- Four- and/or single-zone expansion modules
- Relay output expansion modules
- Single-zone detectors
- Graphic annunciator modules

1.6 Outputs

The XR500 Series provide two Single Pole, Double Throw (SPDT) relay outputs which require the installation of two Model 305 relays, each rated 1 Amp at 30 VDC resistive (power limited sources only). A Model 431 Output Harness is required to use these outputs.

The XR500 Series panels also provide four open collector outputs rated for 50mA each. The open collector outputs provide ground connection for a positive voltage source. A Model 300 Output Harness is required to use these outputs.

1.7 Enclosure Specifications

The XR500 Series panels are shipped in an enclosure with a transformer, End-of-Line resistors, battery leads, user's guide, and programming sheets.

Enclosure Model	Size	Color(s)	Construction (Cold Rolled Steel)
350	17.5"W x 13.5"H x 3.5"D	Gray (G) or Red (R)	18-Guage
350A	17.5"W x 13.5"H x 3.6"D	Gray (G)	18-Guage with 16-Guage door
341	12.75"W x 6.55"H x 2.9"D	Gray (G)	20-Guage
352X	14.5"W x 32.0"H x 4.0"D	Gray (G)	16-Guage

Panel Features

2.1 Description

The DMP XR500 Series Command Processor™ Panel is a versatile 12 VDC, combined access control, burglary, and fire communicator panel with battery backup. The XR500 Series provides eight on-board burglary zones and two on-board 12 VDC Class B powered zones. The powered zones have a reset capability to provide for 2-wire smoke detectors, relays, or other latching devices. The XR500 Series can communicate to one or two DMP SCS-1R Receivers using digital dialer or network communication, or to non-DMP receivers using the Contact ID format.

2.2 Zone Expansion

Up to 574 additional zones are available on the XR500 Series using DMP LCD keypad remote zone capability and zone expansion modules. The panel keypad data bus supports up to sixteen supervised device addresses with each address supporting up to four programmable expansion zones.

Up to 500 zones are available using the on board LX-Bus, Model 461 Interface Adaptor with 481, 462N, 462P and 472 Interface Cards, and any combination of single, four, eight, or 16-zone expansion modules and single-zone LX-Bus™ detectors.

Note: Do not use shielded wire for LX-Bus or Keypad Bus circuits.

2.3 Output Expansion

In addition to the two SPDT relays and four open collector outputs on the XR500 Series, you can also connect up to 25 Model 716 Output Expansion Modules to each LX-Bus. These modules can provide an additional 500 programmable SPDT relays.

The XR500 Series provides 100 Output Schedules you can use for programming the 716 to perform a variety of annunciation and control functions. You can also assign the 716 outputs to any panel Output Options such as Fire Alarm, Communication Fail, or Phone Trouble Outputs. Refer to the 716 Installation Guide (LT-0183).

The LX-Bus™ also supports the Model 717 Graphic Annunciator Module. Each 717 module supplies 20 switched ground outputs that follow the state of their assigned zones.

Note: The 717 supports the first eight Keypad Bus addresses. To follow Keypad Bus addresses nine through 16, install multiple 716 modules. Refer to the 717 Installation Guide (LT-0235) and 716 Installation Guide (LT-0183).

2.4 Central Station Communication

You can program the XR500 Series panel for reporting to one or two DMP SCS-1R Receivers using digital dialer or network communication. The panel can also communicate to non-DMP receivers using the Contact ID communication format. The XR500 Series connects at the premises to a standard RJ31X or RJ38X telephone jack. Use the DMP 893A Dual Phone Line Module when connecting the XR500 Series panel to two separate phone lines in fire or burglary applications.

2.5 Encrypted Communications (XR500N/XR500E only)

An XR500E panel communicates using AES Rijndael encryption. If you currently have an XR500N panel installed, you may contact DMP Customer Service with the panel serial number. The serial number(s) should be sent in writing via e-mail or fax. A separate feature key is sent for each panel to activate encrypted communications using the Feature Upgrade process. Encrypted communication cannot be enabled on a standard XR500 panel. For more information on the Feature Upgrade process see Section 19 in the XR500 Series Programming Guide (LT-0679).

2.6 Before you Begin

Before installing the XR500 Series, we recommend you read through the entire contents of this guide. Familiarize yourself with the features of the panel and the key points to remember during the installation. Be sure to read and understand all of the caution statements printed in bold italics.

2.7 About this Guide

The information in this guide is organized into five sections: Table of Contents, Introduction, Installation, Compliance, and System Diagrams.

- The Table of Contents at the front lists the headings and subheadings used throughout each section of the guide. To the right of each heading is the section number where the information can be found.
- The Introduction section provides an overview of the various components that go into an XR500 Series system and provides diagrams of typical system configurations. This section describes the panel, keypads, zone expansion modules, and accessory modules and provides details on how they operate together in the system.
- The Installation section begins with mounting instructions for the enclosure and continues with detailed XR500 Series panel operational characteristics.
- The Compliance section describes the various regulations the XR500 Series complies with, such as UL.
- The System Diagrams illustrate different ways to wire the XR500 Series to a variety of modules.

Caution Notes

Throughout this guide you will see caution notes containing information you need to know when installing the panel. These cautions are indicated with a yield sign. Whenever you see a caution note, make sure you completely read and understand its information. Failing to follow the caution note can cause damage to the equipment or improper operation of one or more components in the system. See the example shown below.

Always ground the panel before applying power to any devices: The XR500 Series must be properly grounded before connecting any devices or applying power to the panel. Proper grounding protects against Electrostatic Discharge (ESD) that can damage system components.

2.8 How to Use this Guide

To locate information about the XR500 Series installation, first go to the Table of Contents at the front of this guide. Find the subject heading that best describes the information you need and turn to the section number shown to the right of the heading.

The text that follows the heading is written to provide as much information about the subject as possible. If you cannot find the information you need under that heading, try scanning through a few of the headings before and after and reading the text under those that sound similar.

System Components

3.1 Description

The DMP XR500 Series system is made up of an alarm panel with a built-in communicator, an enclosure, battery, one 16.5 VAC transformer, and keypads. You can use up to sixteen supervised 32-character LCD keypads; network communications and expansion interface cards; zone and output expansion modules; and initiating and indicating circuit modules. You can also connect auxiliary devices to the panel's output relays to expand the basic system control capability. Combined current requirements of additional modules may require an auxiliary power supply. Refer to section 6.8 in this guide when calculating power requirements.

3.2 Wiring Diagram

The XR500 Series diagram below shows some of the accessory modules you can connect for use in various applications. A brief description of each module follows in section 3.4.

TYPES OF SERVICE

Central Station DACT service may be provided.

Suitable for Remote Station PPU DACT Service.

Suitable for manual fire alarm, automatic fire alarm, sprinkler supervisory, or water flow alarm.

Suitable for Standard or Encrypted Central Station with NET communication.

DACT Central Station using 350A Attack Resistant enclosure.

Suitable for Bank Safe and Vault Service with 350A Enclosure.

Suitable for Household Fire and Household Burglary.

Suitable for Local, Police Station Connect, Mercantile, and Proprietary with dialer direct communication and 350A Enclosure.

Suitable for Proprietary, PPU, other technologies, (iCOM – XR500 only), local.

SIA CP-01-2000 minimum system is XR500, UL listed local Bell, and off premise DACT communication to an SCS-1R receiver plus listed compatible keypads as indicated in the installation guide.

NFPA 72

This equipment should be installed in accordance with Chapter 11 of the National Fire Alarm Code, ANSI/NFPA 72-2002, (National Fire Protection Association, Batterymarch Park, Quincy, MA 02269). Printed information describing proper installation, operation, testing, maintenance, evacuation planning, and repair service is to be provided with this equipment.

POWER LIMITED

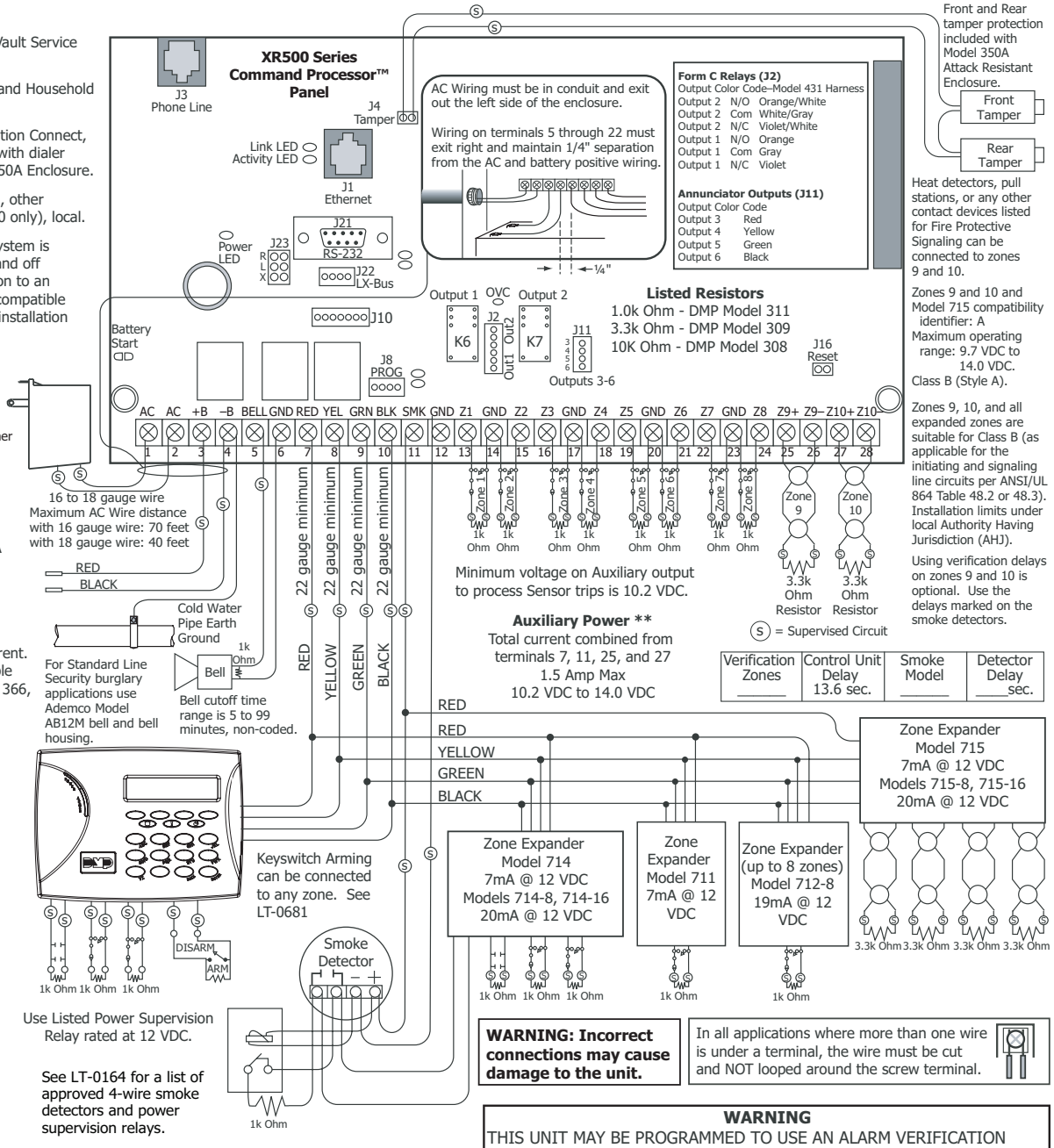
All circuits on the Model XR500 Series comply with the requirements for inherent power limitation and are Class 2 except the red battery wire and AC terminals.

NFPA 72 OPERATING INSTRUCTIONS

The operating instructions found on the last page of LT-0681 must be located adjacent to the control unit or keypad.

HOUSEHOLD FIRE WARNING

Recognized limited energy cable must be used for connection of all initiating, indicating, and supplementary devices.


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
Link LED
Activity LED
J1 Ethernet
J21 RS-232
J22 LX-Bus
J23
Power LED
J10
J8 PROG
Battery Start
J16 Reset
J11
Outputs 3-6
J2
Out1 Out2
K6
K7
Output 1
OVC
Output 2
AC Wiring must be in conduit and exit out the left side of the enclosure.
Wiring on terminals 5 through 22 must exit right and maintain 1/4" separation from the AC and battery positive wiring.
¼"
Form C Relays (J2)
Output Color Code–Model 431 Harness
Output 2 N/O Orange/White
Output 2 Com White/Gray
Output 2 N/C Violet/White
Output 1 N/O Orange
Output 1 Com Gray
Output 1 N/C Violet
Annunciator Outputs (J11)
Output Color Code
Output 3 Red
Output 4 Yellow
Output 5 Green
Output 6 Black
Listed Resistors
1.0k Ohm - DMP Model 311
3.3k Ohm - DMP Model 309
10K Ohm - DMP Model 308
Front and Rear tamper protection included with Model 350A Attack Resistant Enclosure.
Front Tamper
Rear Tamper
Heat detectors, pull stations, or any other contact devices listed for Fire Protective Signaling can be connected to zones 9 and 10.
Zones 9 and 10 and Model 715 compatibility identifier: A
Maximum operating range: 9.7 VDC to 14.0 VDC.
Class B (Style A).
Zones 9, 10, and all expanded zones are suitable for Class B (as applicable for the initiating and signaling line circuits per ANSI/UL 864 Table 48.2 or 48.3). Installation limits under local Authority Having Jurisdiction (AHJ).
Using verification delays on zones 9 and 10 is optional. Use the delays marked on the smoke detectors.
AC AC +B –B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9– Z10+ Z10
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6
Zone 7
Zone 8
Zone 9
Zone 10
1k Ohm
3.3k Ohm Resistor
S = Supervised Circuit
Verification Zones
Control Unit Delay 13.6 sec.
Smoke Model
Detector Delay ____sec.
For listed installations, the Model 327 plug-in transformers shall be installed in a DMP Model ES501 enclosure. The plug-in transformer shall plug into a 120 VAC 60 Hz outlet not controlled by a switch and all 16 to 18 gauge wire shall run through conduit.
16 to 18 gauge wire
Maximum AC Wire distance with 16 gauge wire: 70 feet
with 18 gauge wire: 40 feet
RED
BLACK
22 gauge minimum
Minimum voltage on Auxiliary output to process Sensor trips is 10.2 VDC.
Auxiliary Power **
Total current combined from terminals 7, 11, 25, and 27
1.5 Amp Max
10.2 VDC to 14.0 VDC
Cold Water Pipe Earth Ground
For Standard Line Security burglary applications use Ademco Model AB12M bell and bell housing.
Bell
1k Ohm
Bell cutoff time range is 5 to 99 minutes, non-coded.
RED
YELLOW
GREEN
BLACK
Keyswitch Arming can be connected to any zone. See LT-0681
DISARM
ARM
Smoke Detector
Zone Expander Model 715
7mA @ 12 VDC
Models 715-8, 715-16
20mA @ 12 VDC
Zone Expander Model 714
7mA @ 12 VDC
Models 714-8, 714-16
20mA @ 12 VDC
Zone Expander Model 711
7mA @ 12 VDC
Zone Expander (up to 8 zones) Model 712-8
19mA @ 12 VDC
Use Listed Power Supervision Relay rated at 12 VDC.
See LT-0164 for a list of approved 4-wire smoke detectors and power supervision relays.
WARNING: Incorrect connections may cause damage to the unit.
In all applications where more than one wire is under a terminal, the wire must be cut and NOT looped around the screw terminal.

DMP Transformers

Model 327 – 16.5 VAC 50 VA Class 2 Plug-in

Model 322 – 16 VAC 56 VA Class 2 Wire-in

Secondary Power Supply

1.0 Amps Max. charging current. Use only 12 VDC rechargeable batteries. DMP Models 365, 366, 367, 368, or 369. Replace batteries every 3 to 5 years.

Bell **

12 VDC
Minimum cutoff time 5 min.
1.5 Amp Max

WARNING

THIS UNIT MAY BE PROGRAMMED TO USE AN ALARM VERIFICATION FEATURE THAT RESULTS IN DELAY OF THE SYSTEM ALARM SIGNAL FROM THE INDICATED CIRCUITS. THE TOTAL DELAY (CONTROL UNIT PLUS SMOKE DETECTORS) SHALL NOT EXCEED 60 SECONDS. NO OTHER SMOKE DETECTOR SHALL BE CONNECTED TO THESE CIRCUITS UNLESS APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).

See the XR500 Series Installation Guide (LT-0681) for a complete list of approved 2-wire smoke detectors for zones 9, 10, and 715 Zone Expansion Module zones.

**** For listed installations, total current combined from Auxiliary (terminals 7, 11, 25, and 27) and Bell Power (terminal 5) cannot exceed:**
1.3 Amp with 50 VA transformer, 1.0 Amp Max for Auxiliary Power
1.9 Amp with 56 VA transformer, 1.0 Amp Max for Auxiliary Power and 1.5 Amp Max for Bell

Figure 1: XR500 Series Wiring Diagram

3.3 Lightning Protection

Metal Oxide Varistors and Transient Voltage Suppressors help protect against voltage surges on XR500 Series input and output circuits. Additional surge protection is available by installing the DMP 370 or 370RJ Lightning Suppressors.

3.4 Accessory Devices

Interface Adaptor and Interface Cards	
461 Interface Adaptor Card	Allows you to connect two or more expansion interface cards to the XR500 Series panel. The 461 is an expansion mother board that plugs into the panel J6 Interface Connector and is required when using two or more Interface Cards. Use combinations of Interface Cards for expanding zones, network interfacing, local printing, and connecting wireless devices. Requires Model 350, or 350A Enclosure.
462N Network Interface Card	Allows you to connect the XR500 Series to any compatible data network and use its communication capability in place of standard dial out telephone lines. The 462N also provides an LX-Bus™ for connecting zone and output expansion modules to the panel.
462P Printer Interface Card	Allows you to connect the XR500 Series to any compatible serial printer providing the user with real-time event recording. The 462P also provides an LX-Bus™ for connecting zone and output expansion modules.
463G Digital Cellular Communicator Card	Allows you to connect the XR500 Series to any compatible GPRS/SMS network and use its communication in place of standard dial out lines. The 463G also provides and LX-Bus™ for connecting zone and output expansion modules to the panel.
472 Wireless Interface Card	Provides one LX-Bus for connecting up to 200 wireless or hardwired zone expansion modules.
481 Expansion Interface Card	Provides one LX-Bus for connecting up to 100 zone and output expansion modules.
733, 734 Wiegand Interface Cards	Provides system codeless entry, and arming and disarming using access control readers.
Zone and Output Expansion Modules	
710/710F Bus Splitter/Repeater	Allows you to increase keypad or LX-Bus™ wiring distance to 2500 feet. Model 710F is for 24 VDC applications.
711 Single Point Zone Expanders	Provides one Class B zone for connecting burglary devices.
714, 714-8, 714-16 Zone Expanders	Provides Class B zones for connecting burglary and non-powered fire devices.
712-8 Zone Expander	Provides Class B zones for connecting burglary devices.
715, 715-8, 715-16 Zone Expanders	Provides 12 VDC Class B powered zones for connecting smoke detectors, glassbreak detectors, and other 2- or 4-wire devices.
725 Zone Expanders	Provides 24 VDC Class B powered zones for connecting smoke detectors, glassbreak detectors, and other 2- or 4-wire devices. Requires 710F Bus Splitter/Repeater.
716 Output Expander	Provides four Form C relays (SPDT) and four switched grounds (open collector) for use in a variety of remote annunciation and control applications for use on the LX-Bus only.
717 Graphic Annunciator Module	Provides 20 zone following annunciator outputs (open collector) for use in a variety of remote annunciation and control applications for use on the LX-Bus only.
DMP Two-Way Wireless Devices	
1100X/*1100XH/*1100XI Wireless Receiver	Supports up to 500 devices in residential or commercial wireless operation.
1101 Universal Transmitter	Provides both internal and external contacts that may be used at the same time to yield two individual reporting zones from one wireless transmitter.
1102 Universal Transmitter	Provides an external contact.
* 1114 Four-Zone Expander	Provides four wireless zones
* 1116 Relay Output	Provides one Form C relay
* 1117 LED Annunciator	Provides a visual system status indicator
* 1118 Remote Indicator Light	Provides a visual indication of a Panic situation
***** 1121 PIR Motion Detector	Provides motion detection with pet immunity.
1125 PIR Motion Detector	Provides multiple lens configurations, dual coverage area selection, and sensitivity adjustments.
***** 1129 Glassbreak Detector	Detects the shattering of framed glass mounted in an outside wall and provides full-pattern coverage and false-alarm immunity.
***** 1131 Recessed Contact	Provides a recessed contact option for door or window applications.
***These devices have not been investigated by a Nationally Recognized Testing Laboratory (NRTL).**	

3.4 Accessory Devices (continued)

DMP Two-Way Wireless Devices (continued)	
***** 1139 Bill Trap	Provides a silent alarm option for retail and banking cash drawers.
1142BC Two-button Hold-up Belt Clip Transmitter	Provides two-button hold-up operation with a belt clip.
1142 Two-button Hold-up Transmitter	Provides permanently mounted under-the-counter two-button hold-up operation.
***** 1145 (Four-Button) ***** 1146 (Two-Button) ***** 1147 (One-Button)	Key Fob transmitters designed to clip onto a key ring or lanyard.
1161 Residential Smoke Detector	Residential smoke detector with sounder.
1162 Residential Smoke/Heat Detector	Residential smoke/heat detector with sounder and fixed rate-of-rise heat detector.
Indicating and Initiating Devices	
865 Supervised Style Y or Z Notification Circuit Module	Provides supervised alarm current when using the XR500 Series panel bell output and up to 5 Amps at 12 or 24 VDC when using a listed auxiliary power supply. The 865 can supervise 2-wire Style Y or Z circuits for ground faults, opens, shorts, and shorts with individual LED annunciation.
866 Notification Circuit Module	Provides supervised alarm current using the XR500 Series panel bell output and up to 5 Amps at 12 or 24 VDC when using a listed auxiliary power supply. The 866 can supervise Style W circuits for opens and shorts.
867 Style W LX-Bus Notification Circuit Module	Provides supervised alarm current using the XR500 Series panel bell output and up to 5 Amps at 12 or 24 VDC when using a listed auxiliary power supply. The 867 connects to the XR500 Series panel LX-Bus™ and provides one 2-wire Style W notification circuit for ground fault, open, and short conditions. Individual Bell Relay addresses Bell Ring styles.
869 Dual Style D Initiating Module	Provides two Style D, 4-wire initiating zones for connecting waterflow switches and other non-powered fire and burglary devices.
Accessory Modules and Keypads	
893A Dual Phone Line Module	Allows you to supervise two standard phone lines connected to an XR500 Series panel. The 893A module monitors the main and backup phone lines for a sustained voltage drop and alerts users when the phone line is bad.
***** ePAD™ Virtual Keypads	Allows users to control the security system from any computer using the Internet.
iCOM™ Network Alarm Router	Allows the XR500 panel to send signals through the Internet/Ethernet.
iCOM-E™ High-Security Network Alarm Router	Allow the XR500 panel to send encrypted signals through the Internet/Ethernet. For use when the Advanced Encryption Standard (AES) Encryption Algorithm is required. The iCOM-E is NIST certified.
LCD keypads	Allows you to control the panel from various remote locations. Connect up to sixteen supervised Model 630F Remote Fire Command Center, Model 690/690F, 790/790F, 693/793 Security Command™ keypads, 7060, 7063, 7070, 7073, 7160, 7163, 7170, 7173 Thinline™ keypads, 7060A, 7063A, 7070A, 7073A Aqualite™ keypads, or 7760 Clear Touch™ keypad to the keypad bus using terminals 7, 8, 9, and 10.
Addressable Smoke Detectors	
521LX, 521LXT	Single-zone, addressable conventional smoke, smoke/heat detectors that connect to the LX-Bus. Includes remote maintenance reporting, drift compensation, and multi-criteria detection.
*** This device has not been investigated and shall not be used in a listed installations.**	

3.5 Notification Appliances

The following table indicates the approved notification appliances that can be used with the XR500 Series system.

Wheelock Model No.	Description	12V
MT-12/24	Multi-tone Horn	x
NH-12/24	Standard Horn	x
MB-G6-12	Bell, 6 inch	x
MB-G10-12	Bell, 10 inch	x
RSS-121575W-F	Strobe, 15/75 candela	x
RSSP-121575W-F	Strobe, w/retrofit plate	x
NS-121575W-F	Horn Strobe, 15/75 candela	x
SM-12/24-R	Sync Module, Single circuit,	x
DSM-12/24-R	Sync Module, Dual circuit	x

Installation

4.1 Mounting the Enclosure

The metal enclosure for the XR500 Series must be mounted in a secure, dry place to protect the panel from damage due to tampering or the elements. It is not necessary to remove the XR500 Series PCB when installing the enclosure. Figure 2 shows the mounting hole locations for the Model 350/350A Enclosures. Figure 3 shows the Model 341 Small Enclosure. Figure 4 shows the Model 352X panel cabinet and 352S shelf cabinet for multiple batteries.

Note: When using the XR500 Series panel for listed applications, use the Model 350, 349, 341, or 352S enclosure for standby batteries. When using the 352X or 352S in listed applications, the enclosure must be surface mounted on the wall.

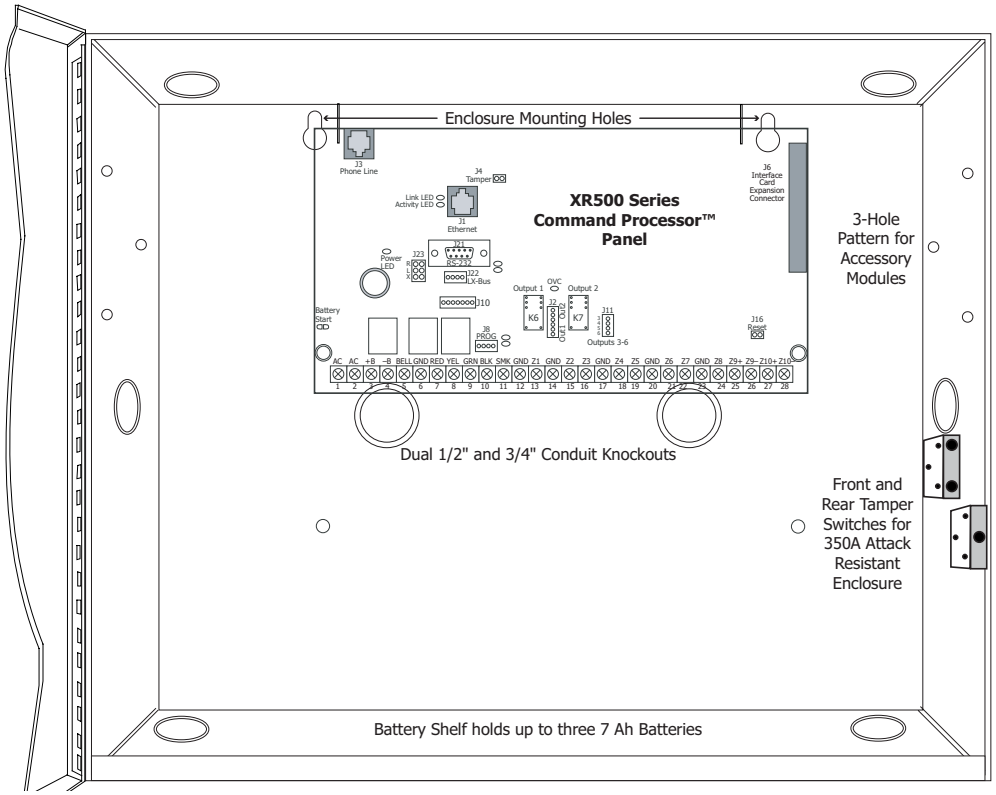


Figure 2: XR500 Series in Model 350 or 350A Enclosure

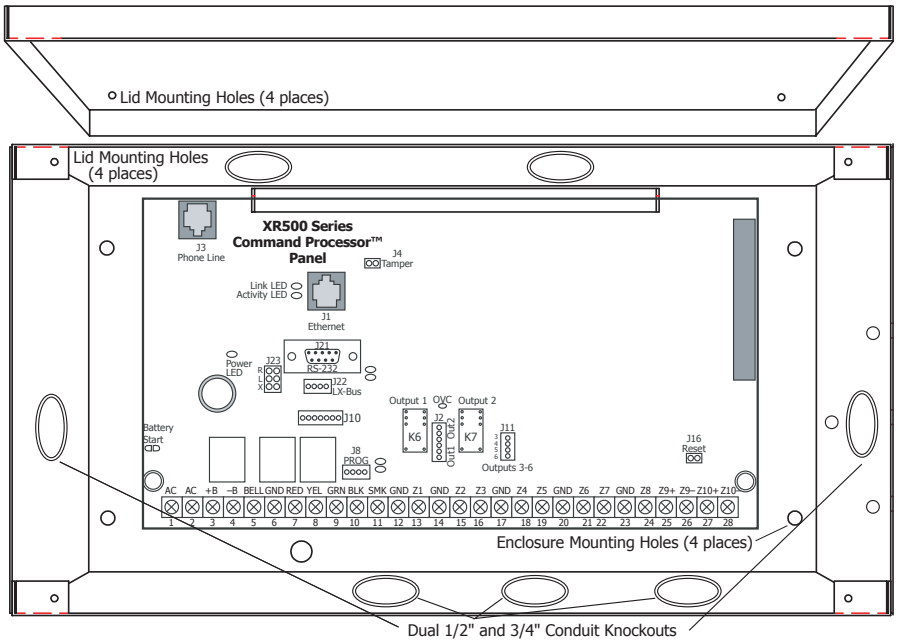


Figure 3: XR500 Series in Model 341 Enclosure

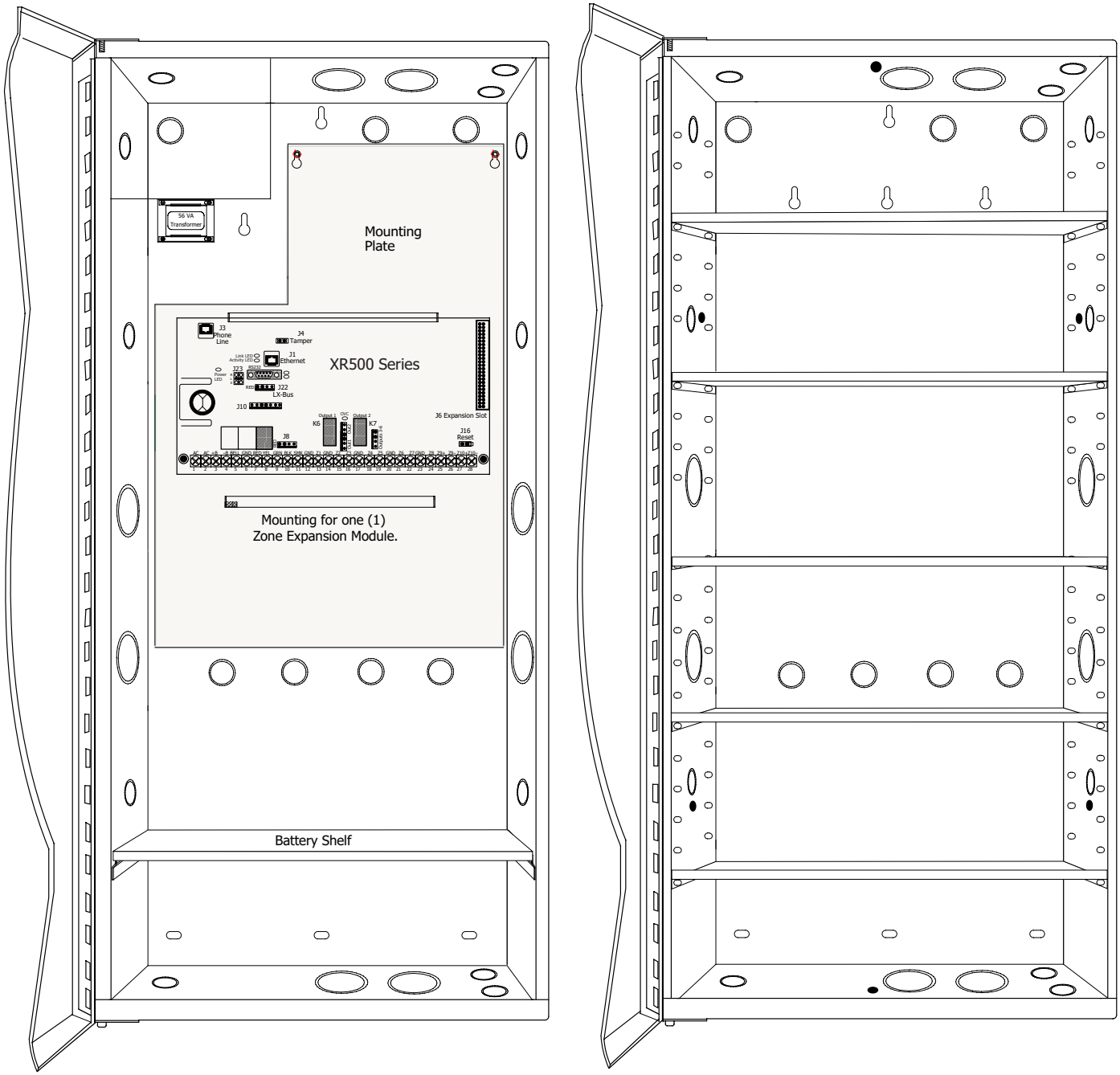


Figure 4: XR500 Series in Model 352X Enclosure and Separate 352S Enclosure with Shelves

4.2 Mounting Keypads and Zone Expansion Modules

DMP LCD keypads have removable covers that allow you to easily mount the keypad to a wall or other flat surface using the screw holes on each corner of the base. Before mounting the base, connect the keypad wire harness leads to the keypad cable from the panel and to any device wiring run to that location. Then attach the harness to the pin connector on the PC board, mount the base, and install the keypad cover making sure all of the keys extend through their respective holes.

For mounting keypads on solid walls, or for applications where conduit is required, use the Model 695 1-1/2" deep or the Model 696 1/2" deep backboxes.

The DMP 711, 712-8, 714, 715, 716, and 717 modules are each contained in molded plastic housings with removable covers. The base provides you with mounting holes for installing the unit to a wall, switch plate, or other surface.

4.3 Connecting LX-Bus and Keypad Bus Devices

Several factors determine the DMP LX-Bus™ and keypad bus performance characteristics: the wire length and gauge used, the number of devices connected, and the voltage at each device. When planning an LX-Bus™ and keypad bus installation, keep in mind the following information:

1. DMP recommends using 18 or 22-gauge **unshielded** wire for all keypad and LX-Bus circuits. **Do not** use twisted pair or shielded wire for LX-Bus and keypad bus data circuits.
2. On keypad bus circuits, to maintain auxiliary power integrity when using 22-gauge wire do not exceed 500 feet. When using 18-gauge wire do not exceed 1,000 feet. To increase the wire length or to add devices, install an additional power supply that is listed for Fire Protective Signaling, power limited, and regulated (12 VDC nominal) with battery backup.
   Note: Each panel allows a specific number of supervised keypads. Add additional keypads in the unsupervised mode. Refer to the panel installation guide for the specific number of supervised keypads allowed.
3. Maximum distance for any one bus circuit (length of wire) is 2,500 feet regardless of the wire gauge. This distance can be in the form of one long wire run or multiple branches with all wiring totaling no more than 2,500 feet. As wire distance from the panel increases, DC voltage on the wire decreases. Maximum number of LX-Bus devices on the first 2,500 foot circuit is 40 devices.
4. Maximum voltage drop between the panel (or auxiliary power supply) and any device is 2.0 VDC. If the voltage at any device is less than the required level, add an auxiliary power supply at the end of the circuit. When voltage is too low, the devices cannot operate properly.

For additional information refer to the LX-Bus/Keypad Bus Wiring Application Note (LT-2031) and/or 710/710F Installation Sheet (LT-0310).

Expansion Interface Cards (Models 481, 462N, 462P and 472)

The LX-Bus provided on these cards requires only a 4-wire cable between the card and any devices connected to the bus. You can connect devices (zone or output expansion modules) together on the same cable or provide separate runs back to the card. Each LX-Bus provides up to 100 zones or outputs.

Note: Do not use twisted pair or shielded wire when connecting an LX-Bus or keypad bus.

Primary Power Supply

5.1 AC Terminals 1 and 2

Connect the transformer wires to terminals 1 and 2 on the panel. Use no more than 70 ft. of 16 gauge or 40 ft. of 18 gauge wire between the transformer and the XR500 Series.

Always ground the panel before applying power to any devices: The XR500 Series must be properly grounded before connecting any devices or applying power to the panel. Proper grounding protects against Electrostatic Discharge (ESD) that can damage system components. See Earth ground section 6.2.

5.2 Transformer Types

Use Model 327 (16.5 VAC 50 VA) plug-in or Model 322 (16 VAC 56 VA) wire-in transformer. Use Model 322 (16 VAC 56 VA) wire-in transformer when required by the Authority Having Jurisdiction (AHJ).

The transformer must be connected to an unswitched 120 VAC 60 Hz electrical outlet with at least 350mA of available current. ***Never share the transformer output with any other equipment***.

Secondary Power Supply

6.1 Battery Terminals 3 and 4

Connect the black battery lead to the negative battery terminal. The negative terminal connects to the enclosure ground internally through the XR500 Series circuit board. Connect the red battery lead to the battery positive terminal. Observe polarity when connecting the battery.

You can add a second battery in parallel using the DMP Model 318 Dual Battery Harness. **DMP requires each battery be separated by a PTC in the battery harness wiring to protect each battery from a reversal or short within the circuit. See Figure 5.**

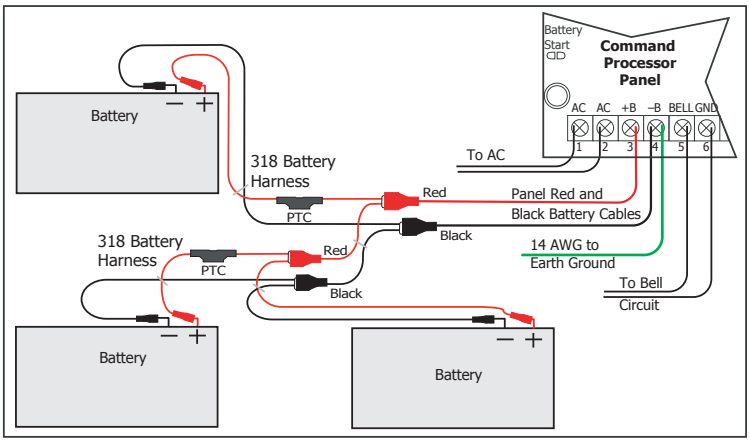


Figure 5: Wiring Multiple Batteries

For UL installations, all batteries shall be installed in a DMP Model 350 or Model 352S enclosure and all wiring shall run through conduit. The enclosure shall be installed to the left of the XR500 Series enclosure to ensure Battery and AC wire separation.

Use sealed lead-acid batteries only: Use the DMP Model 365 (12 VDC 9 Ah), DMP Model 367 (12 VDC 7.7 Ah), Model 366 (12 VDC 18 Ah), Model 368 (12 VDC 4.5 Ah), or Model 369 (12 VDC 7 Ah) sealed lead-acid rechargeable battery. Batteries supplied by DMP have been tested to ensure proper charging with DMP products.

GEL CELL BATTERIES CANNOT BE USED WITH THE XR500 SERIES PANEL.

6.2 Earth Ground

To provide proper transient suppression, XR500 Series panel terminal 4 must be connected to earth ground using 14 gauge or larger wire. DMP recommends connecting to a cold water pipe, ground rod, or building ground only. Do not connect to an electrical ground or conduit, sprinkler or gas pipes, or to a telephone company ground.

6.3 Battery Only Restart

When powering up the XR500 Series panel without AC power, briefly short across the battery start pads to pull in the battery cutoff relay. The leads need a momentary short only. Once the relay has pulled in, the battery voltage holds it in that condition. If the XR500 Series panel is powered up with an AC transformer, the battery cutoff relay is pulled in automatically. For more information refer to Figure 1.

6.4 Battery Replacement Period

DMP recommends replacing the battery every 3 to 5 years under normal use.

6.5 Discharge/Recharge

The XR500 Series battery charging circuit float charges at 13.9 VDC at a maximum current of 1.0 Amps using a 50 VA or 56 VA transformer. Listed below are the various battery voltage level conditions:

Battery Trouble:	Below	11.9 VDC
Battery Cutoff:	Below	10.2 VDC
Battery Restored:	Above	12.6 VDC

6.6 Battery Supervision

The XR500 Series tests the battery when AC power is present. The test is done every three minutes and lasts for five seconds. During the test, the panel places a load on the battery; if the battery voltage falls below 11.9 VDC a low battery is detected. If AC power is not present, a low battery is detected any time the battery voltage falls below 11.9 VDC.

If a low battery is detected with AC power present, the test repeats every two minutes until the battery charges above 12.6 VDC indicating the battery has restored voltage. If a weak battery is replaced with a fully charged battery, the restored battery will not be detected until the next two minute test is completed.

6.7 Battery Cutoff

The panel disconnects the battery any time the battery voltage drops below 10.2 VDC. This prevents battery deep discharge damage.

6.8 XR500 Series Power Requirements

During AC power failure, the XR500 Series panel and all connected auxiliary devices draw their power from the battery. All devices must be taken into consideration when calculating the battery standby capacity. The following table lists the XR500 Series panel power requirements. You must add the additional current draw of keypads, zone expansion modules, smoke detector output, and any other auxiliary devices used in the system for the total current required. The total is then multiplied by the number of standby hours required to calculate the total ampere-hours required.

Standby Battery Power Calculations	Standby Current	Alarm Current
XR500 Series Control Panel	Qty 1 x 180mA 180 mA	Qty 1 x 180mA 180 mA
Relay Outputs 1-2 (ON)	Qty _____ 30mA _____	Qty _____ 30mA _____
Switch Grounds 3-6 (ON)	Qty _____ 5mA _____	Qty _____ 5mA _____
Active Zones 1-8	Qty _____ 1.6mA _____	Qty _____ *2mA _____
Active Zones 9-10	Qty _____ 4mA _____	Qty _____ 30mA _____
2-Wire Smoke Detectors	Qty _____ 0.1mA _____	Qty _____ 0.1mA _____
Panel Bell Output		1500mA _____mA
893A Dual Phone Line Module	Qty _____ x 12mA _____	Qty _____ x 50mA _____
461 Interface Adaptor Card	7mA _____	7mA _____
462N Network Interface Card	Qty _____ x 50mA _____	Qty _____ x 50mA _____
462P Printer Interface Card	Qty _____ x 50mA _____	Qty _____ x 50mA _____
463G Digital Cellular Communicator Card	Qty _____ x 21mA _____	Qty _____ x 21mA _____
472 FA Wireless Interface Card	Qty _____ x 85mA _____	Qty _____ x 85mA _____
481 Expansion Interface Card	Qty _____ x 15mA _____	Qty _____ x 15mA _____
1100X Wireless Receiver	Qty _____ x 40mA _____	Qty _____ x 40mA _____
1100XH Wireless High Power Receiver	Qty _____ x 160mA _____	Qty _____ x 160mA _____
1100XI Wireless In-line Receiver	Qty _____ 45mA _____	Qty _____ x 45mA _____
860 Relay Output Module (one relay active)	Qty _____ x 34mA _____	Qty _____ x 34mA _____
All four relays active	138mA _____	138mA _____
865 Style Y or Z Notification Module	Qty _____ x 26mA _____	Qty _____ x 85mA _____
866 Style W Notification Module	Qty _____ x 45mA _____	Qty _____ x 75mA _____
867 LX-Bus Style W Notification Module	Qty _____ x 30mA _____	Qty _____ x 80mA _____
869 Dual Style D Initiating Module	Qty _____ x 25mA _____	Qty _____ x 75mA _____
630F Remote Fire Command Center	Qty _____ x 63mA _____	Qty _____ x 92mA _____
690/690F Security Command Keypad	Qty _____ x 77mA _____	Qty _____ x 84mA _____
693/793 Easy Entry Keypad	Qty _____ x 92mA _____	Qty _____ x 120mA _____
Active Zones (EOL Installed)	1.6mA _____	Qty _____ x *2mA _____
790/790F Security Command Keypad	Qty _____ x 77mA _____	Qty _____ x 84mA _____
Active Zones (EOL Installed)	1.6mA _____	Qty _____ x *2mA _____
7060/7160 Thinline/7060A Aqualite Keypad	Qty _____ x 72mA _____	Qty _____ x 80mA _____
7063/7163 Thinline/7063A Aqualite Keypad	Qty _____ x 85mA _____	Qty _____ x 100mA _____
7070/7170 Thinline/7070A Aqualite Keypad	Qty _____ x 72mA _____	Qty _____ x 87mA _____
Active Zones (EOL Installed)	1.6mA _____	Qty _____ x *2mA _____
7073/7173 Thinline/7073A Aqualite Keypad	Qty _____ x 85mA _____	Qty _____ x 100mA _____
Active Zones (EOL Installed)	1.6mA _____	Qty _____ x *2mA _____
7760 Clear Touch Keypad	Qty _____ x 65mA _____	Qty _____ x 115mA _____
733 Wiegand Interface Module	Qty _____ x 30mA _____	Qty _____ x 30mA _____
Active Zones (EOL Installed)	Qty _____ x 1.6mA _____	Qty _____ x *2mA _____
Annunciator (ON)		Qty _____ x 20mA _____
734 Wiegand Interface Module	Qty _____ x 15mA _____	Qty _____ x 15mA _____
Active Zones (EOL Installed)	Qty _____ x 1.6mA _____	Qty _____ x *2mA _____
Annunciator (ON)		Qty _____ x 20mA _____
Copy Sub-Totals to next page	Sub-Total Standby _____mA	Sub-Total Alarm _____mA

*Based on 10% of active zones in alarm.

Standby Battery Power Calculations	Standby Current	Alarm Current
736P POPIT Interface Module Radionics Popex, POPITs, OctoPOPITs	Qty _____ x 25mA _____ Qty _____ x ___mA _____	Qty _____ x 25mA _____ Qty _____ x ___mA _____
738A Ademco Wireless Interface Module	Qty _____ x 75mA _____	Qty _____ x 75mA _____
710 Bus Splitter/Repeater Module	Qty _____ x 30mA _____	Qty _____ x 30mA _____
710F Fire Bus Splitter/Repeater Module	Qty _____ x 40mA _____	Qty _____ x 40mA _____
711, 714 Zone Expansion Modules Active Zones (EOL Installed)	Qty _____ x 7mA _____ Qty _____ x 1.6mA _____	Qty _____ x 7mA _____ Qty _____ x *2mA _____
712-8 Zone Expansion Module Active Zones (EOL Installed)	Qty _____ x 17mA _____ Qty _____ x 1.6mA _____	Qty _____ x 17mA _____ Qty _____ x *2mA _____
714-8, 714-16 Zone Expansion Module Active Zones (EOL Installed)	Qty _____ x 20mA _____ Qty _____ x 1.6mA _____	Qty _____ x 20mA _____ Qty _____ x *2mA _____
715 Zone Expansion Module Active Zones (EOL Installed) 2-Wire Smokes	Qty _____ x 7mA _____ Qty _____ x 4mA _____ Qty _____ x .1mA _____	Qty _____ x 7mA _____ Qty _____ x *30mA _____ Qty _____ x .1mA _____
715-8, 715-16 Zone Expansion Modules Active Zones (EOL Installed) 2-Wire Smokes	Qty _____ x 20mA _____ Qty _____ x 4mA _____ Qty _____ x .1mA _____	Qty _____ x 20mA _____ Qty _____ x *30mA _____ Qty _____ x .1mA _____
716 Output Expansion Module Active Form C Relays	Qty _____ x 7mA _____	Qty _____ x 7mA _____ Qty _____ x 28mA _____
717 Graphic Annunciator Module Annunciator Outputs	Qty _____ x 10mA _____	Qty _____ x 10mA _____ Qty _____ x 1mA _____
521LX, 521LXT Smoke Detectors	Qty _____ x 8.8mA _____	Qty _____ x *28mA _____
572 Indicator LED	Qty _____ x 20mA _____	Qty _____ x 20mA _____
iCOM, iCOM-E Network Alarm Routers	Qty _____ x 78.1mA _____	Qty _____ x 78.1mA _____
Aux. Powered Devices on Terminals 7 and 11 Other than Keypads and LX-Bus Modules	_____mA	_____mA
This page only	Sub-Total Standby _____mA	Sub-Total Alarm _____mA
Sub-Totals from previous page	Sub-Total Standby _____mA	Sub-Total Alarm _____mA
*Based on 10% of active zones in alarm	Total Standby _____mA	Total Alarm _____mA

Total Standby_____mA x number of Standby Hours needed _____ = _____mA-hours
Total Alarm _____mA +_____mA-hours
Total _____mA-hours
X .001
= _____Amp-hrs Required

Refer to section 6.9 for standby battery selection.

6.9 Standby Battery Selection

To choose the type and number of batteries needed for 24, 60, or 72 hours of standby power based on the Amp Hours Required calculation from section 6.8 XR500 Series Power Requirements, perform the following:

1. Select the desired standby hours required from the table below: 24, 60, or 72 hours
2. Select the desired battery size: Model 368 (12 VDC 4.5 Ah), Model 369 (12 VDC 7 Ah), Model 367 (12 VDC 7.7 Ah), Model 365 (12 VDC 9 Ah), Model 366 (12 VDC 18 Ah).
3. Select a Max. Ah Available number that is just greater than the number calculated as the Amp Hours Required.
4. Install the number of batteries shown in the corresponding No. of Batteries required column.

Example: If the Amp Hours Required calculation equals 22 Ah for 24 hours of standby time and 4.5 Ah batteries are desired, install six (6) Model 368 (12 VDC, 4.5 Ah) batteries.

Note: You can use either a Model 327 Plug-in 50 VA or Model 322 Wire-in 56 VA Transformer with any of the Number of Batteries choices listed below.

For UL installations, all batteries shall be installed in a DMP Model 350 enclosure and all wiring shall run through conduit. The enclosure shall be installed to the left of the XR500 Series enclosure to ensure Battery and AC wire separation.

24 hours of standby power

4.5 Ah Batteries	
Max. Ah Available	No. of Batteries
8	2
12	3
16	4
20	5
24	6
28	7
32	8
36	9
40	10

7 Ah Batteries	
Max. Ah Available	No. of Batteries
6	1
12	2
18	3
24	4
31	5
37	6
43	7

7.7 Ah Batteries	
Max. Ah Available	No. of Batteries
6	1
13	2
20	3
27	4
34	5
41	6

9 Ah Batteries	
Max. Ah Available	No. of Batteries
8	1
16	2
24	3
32	4
40	5

18 Ah Batteries	
Max. Ah Available	No. of Batteries
16	1
32	2
48	3

Note: 48 hours is the typical battery recharge time for any of the Number of Batteries shown in this section.

60 hours of standby power

7 Ah Batteries	
Max. Ah Available	No. of Batteries
13	2
20	3
27	4
33	5
40	6
47	7
54	8
60	9
67	10

7.7 Ah Batteries	
Max. Ah Available	No. of Batteries
14	2
22	3
29	4
37	5
44	6
52	7
59	8
67	9

9 Ah Batteries	
Max. Ah Available	No. of Batteries
17	2
26	3
34	4
43	5
52	6
61	7
69	8

18 Ah Batteries	
Max. Ah Available	No. of Batteries
17	1
34	2
52	3
69	4

Note: 48 hours is the typical battery recharge time for any of the Number of Batteries shown in this section.

72 hours of standby power

9 Ah Batteries	
Max. Ah Available	No. of Batteries
16	2
25	3
33	4
42	5
50	6
59	7
67	8

18 Ah Batteries	
Max. Ah Available	No. of Batteries
16	1
33	2
50	3
67	4

Note: 72 hours is the typical battery recharge time required for any of the Number of Batteries shown in this section.

Note: If the Amp Hours Required calculation is greater than any Max. Ah Available number shown on a table, then add power supply(s) to power some system devices allowing the Amp Hours Required calculation to be reduced.

Bell Output

7.1 Terminals 5 and 6

Terminal 5 supplies positive 12 VDC to power alarm bells or horns. This output can be steady, pulsed, or temporal depending upon the Bell Action specified in Output Options. Terminal 6 is the ground reference for the bell circuit. This supervised output detects 1k Ohms or less as normal. The indicating appliance can supply this resistance. If using a horn or siren, a 1k Ohm 1/2 W EOL resistor (provided) should be added across the bell circuit to provide supervision.

Keypad Bus

8.1 Description

XR500 Series panel terminals 7, 8, 9, and 10 are for the keypad bus. You can connect up to sixteen supervised keypads and multiple unsupervised keypads to the XR500 Series. In addition to DMP LCD keypads, you can also connect any combination of zone expansion modules to the data bus. Refer to the specific device Installation sheet for the maximum number of keypad Bus devices.

Refer to the section titled LX-Bus for complete information about the LX-Bus 4-pin header and expansion slot.

Note: Do not use shielded wire for LX-Bus/Keypad Bus circuits.

8.2 Terminal 7 - RED

This terminal supplies positive 12 VDC to power DMP LCD keypads and zone expansion modules. Terminal 7 also supplies power for any auxiliary device. The ground reference for terminal 7 is terminal 10.

The output current is shared with the smoke power output on terminal 11 and Zones 9 and 10. Current draw for all connected devices must not exceed the panel maximum current rating.

8.3 Terminal 8 - YELLOW

Terminal 8 receives data from keypads and zone expansion modules. It cannot be used for any other purpose.

8.4 Terminal 9 - GREEN

Terminal 9 transmits data to keypads and zone expansion modules. It cannot be used for any other purpose.

8.5 Terminal 10 - BLACK

Terminal 10 is the ground reference for DMP LCD keypads, zone expansion modules, and all auxiliary devices being powered by terminal 7.

8.6 J8 Programming Connection

A 4-pin header (J8) is provided to connect a keypad when using a DMP Model 330 Programming Cable. This provides a quick and easy connection for panel programming.

You may also use the J8 Programming Header to connect Keypad Bus devices. This is an alternative to connecting keypad bus devices to terminals 7, 8, 9, and 10.

8.7 OVC LED

The Overcurrent LED (OVC) lights Red when the devices connected to the Keypad Bus and LX-Bus(es) draw more current than the panel is rated for. The OVC is located above Outputs 1 and 2 on the panel and turns a steady Red when lit. When the OVC LED lights Red, the LX-Bus(es) and Keypad bus are shut down.

Smoke and Glassbreak Detector Output

9.1 Terminals 11 and 12

Terminal 11 supplies positive 12 VDC to power 4-wire smoke detectors and other powered devices. This output can be turned off by the user for 5 seconds using the Sensor Reset User Menu option to allow latched devices to reset. Terminal 12 is the ground reference for terminal 11. See LT-0164 for a list of approved 4-wire smoke detectors and power supervision relays.

9.2 Current Rating

The Output current from terminal 11 is shared with terminals 7, 25, and 27.

The total current draw of all devices powered from the panel must be included with terminal 11 calculations and must not exceed the maximum output rating.

Protection Zones

10.1 Terminals 13–24

Zones 1 to 8 (terminals 13 to 24) on the XR500 Series panel are all grounded burglary zones. For programming purposes, the zone numbers are 1 through 8. Listed below are terminal 13 to 24 connection functions.

Terminal	Function	Terminal	Function
13	Zone 1 voltage sensing	19	Zone 5 voltage sensing
14	Ground for Zones 1 and 2	20	Ground for Zones 5 and 6
15	Zone 2 voltage sensing	21	Zone 6 voltage sensing
16	Zone 3 voltage sensing	22	Zone 7 voltage sensing
17	Ground for Zones 3 and 4	23	Ground for Zones 7 and 8
18	Zone 4 voltage sensing	24	Zone 8 voltage sensing

The voltage sensing terminal measures the voltage across a 1k Ohm End-of-Line resistor to ground. Use DMP Model 311 1k Ohm resistors. Dry contact sensing devices can be used in series (normally-closed) or in parallel (normally-open) with any of the burglary protection zones.

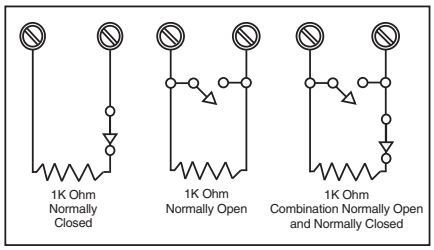


Figure 6: Protection Zone Wiring

10.2 Operational Parameters

Each protection zone detects three conditions: Open, Normal, and Short. Listed below are voltage and resistance parameters for each condition:

Condition	Resistance on zone	Voltage on positive terminal
Open	over 1300 ohms	over 2.0 VDC
Normal	600 to 1300 ohms	1.2 to 2.0 VDC
Short	under 600 ohms	under 1.2 VDC

10.3 Zone Response Time

A condition must be present on a zone for 500 milliseconds before it is detected by the XR500 Series panel. Ensure detection devices used on the protection zones are rated for use with this delay. Zones 1-10 can also be programmed for a fast response delay of 160 milliseconds.

10.4 Keyswitch Arming Zone

Using a keyswitch on an Arming type zone allows you to arm and disarm selected areas without having to enter a user code.

Powered Zones for 2-Wire Smoke Detectors

11.1 Terminals 25–26 and 27–28

Panel terminals 25 through 28 provide two resettable Class B, Style A, 2-wire powered zones. For programming purposes the zone numbers are 9 and 10.

Note: The maximum wire length for either zone 9 or zone 10 is 3000 feet using 18 AWG or 1000 feet using 22 AWG.

When using 725 Zone Expansion Modules, use UL Listed Model 316 EOL resistors. The UL compatibility identifier for the zones using 725 Zone Expansion Modules is B. When using all other zone expansion modules, use UL Listed Model 309 EOL resistors. The UL compatibility identifier for the zones is A.

Note: Do not mix detectors from different manufacturers on the same zone.

Caution: Performing a Sensor Reset momentarily drops power to the devices on Zones 9 and 10. The panel views these zones (9 and 10) as “Open” while the power is absent.

11.2 Compatible 2-Wire Smoke Detector Chart

Manufacturer	Model	Detector ID	Base	Base ID	DC Voltage Range	# of Detectors (12V/24V)	Zone Expansion Modules	Panel Zones
Detection Systems	DS230, DS230F	B/A	MB2W, MB2WL	A	8.5-33	10	725	
Detection Systems	DS250, DS250TH	B	MB2W, MB2WL	A	8.5-33	10/12	715, 715-8, 715-16, 725	9 & 10
Detection Systems	DS250HD	B	MB2W, MB2WL	A	8.5-33	10	715, 715-8, 715-16	9 & 10
Detection Systems	DS260	B/A	MB2W, MB2WL	A	8.5-33	17	725	
Detection Systems	DS282, DS282TH, DS282THC, DS282THS	B			8.5-33	10/12	715, 715-8, 715-16, 725	9 & 10
Hochiki	SLR-835B-2 SLR-835BH-2	HD-6	N/A		8-35	14	725	
Hochiki	SLR-24, SLR-24H	HD-3	NS4-220	HB-3	15-33	15	725	
Hochiki	SIJ-24, DCD-190, DCD-135	HD-3	NS4-220	HB-3	15-33	15	725	
Hochiki	SLR-24, SLR-24H	HD-3	NS6-220	HB-3	15-33	15	725	
Hochiki	SIJ-24	HD-3	NS6-220	HB-3	15-33	20	725	
Hochiki	DCD-190, DCD-135	HD-3	NS6-220	HB-3	15-33	16	725	
Sentrol/ESL	429AT, 521B, 521BXT, 521NB, 521NBXT	S09A			6.5-20	12	715, 715-8, 715-16	9 & 10
Sentrol/ESL	429C, 429CT, 521B/BXT	S10A			8.5-33	12	725	
Sentrol/ESL	429CRT, 429CST, 429CSST, 521CRXT	S11A			8.5-33	12	725	
Sentrol/ESL	711U, 712U, 713-5U, 713-6U, 721U, 721UT	S10A	701E, 70-1U, 702E, 702U	S00	8.5-33	12	725	
Sentrol/ESL	731U, 723U	S11A	701E, 701U, 702E, 702U, 702RE, 702RU	S00	8.5-33	12	725	
System Sensor	1400	A			8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	1151, 2151	A	B110PL, B401		8.5-35	10/10	715, 715-8, 715-16, 725	9 & 10
System Sensor	1451, 2451TH	A	B401, B401B		8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	1451DH	A	DH400		8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	2100T, 2100B, 2100TB, 2100D, 2100TD	A			8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	2400, 2400AT, 2400AIT, 2400TH	A			8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	2451	A	B401, B401B, DH400		8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	2W-B, 2WT-B	A			8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	DH100P, DH100LP	A			8.5-35	10	715, 715-8, 715-16, 725	9 & 10

Figure 7: Compatible 2-Wire Smoke Detectors

Dry Contact Relay Outputs

12.1 Description

The XR500 Series panel provides two auxiliary SPDT relays when equipped with two DMP Model 305 relays in sockets K6 (Output 1) and K7 (Output 2) and a Model 431 Output Harness on the J2 6-pin Header. Each relay provides one SPDT set of contacts that can be operated by any of the functions listed below:

1) Activation by zone condition: Steady, Pulsing, Momentary, and Follow
2) Activation by 24-hour 7-day schedule: One on and one off time a day for each relay
3) Manual activation from the DMP LCD keypad menu
4) Communication failure
5) Armed area annunciation
6) Fire Alarm or Fire Trouble
7) Ambush Alarm
8) Exit and Entry timers
9) System Ready
10) Late to Close

Refer to the XR500 Series Programming Guide (LT-0679) for specific information.

12.2 Contact Rating

The Model 305 relay contacts are rated for 1 Amp at 30 VDC resistive. You can connect auxiliary power to the Relay Output 1 common terminal by installing the gray harness wire to terminal 7. Current draw for all connected devices must not exceed the panel maximum current rating.

12.3 Model 431 Output Harness Wiring

The relay contacts are accessible by installing the DMP 431 Output Harness on the 6-pin header labeled J2. Output 2 uses the top three prongs, and output 1 uses the bottom three prongs. The wire harness and contact locations are shown below:

Contact	Color
Output 1 normally closed	Violet
Output 1 common	Gray
Output 1 normally open	Orange
Output 2 normally closed	Violet with white stripe
Output 2 common	White with gray stripe
Output 2 normally open	Orange with white stripe

The relay contacts must be connected to devices located within the same room as the XR500 Series panel.

Annunciator Outputs

13.1 Description

The four annunciator outputs can be programmed to indicate the activity of the panel zones or conditions occurring on the system. Annunciator **outputs do not provide a voltage but instead switch-to-ground** a voltage from another source. The outputs can respond to any of the conditions listed in section 12.1 above.

13.2 Model 300 Harness Wiring

Access the open collector outputs by installing DMP 300 Harness on the 4-pin header labeled J11. The output locations are shown below. For UL applications, devices connected to the outputs must be located within the same room as the panel.

Output	Color	Wire	Output	Color	Wire
3	Red	1	5	Green	3
4	Yellow	2	6	Black	4

13.3 Model 860 Relay Module

Connect a Model 860 Relay Module to the J11 on the XR500 Series panel to provide relays for outputs 3-6. Use these relays for electrical isolation between the alarm panel and other systems or for switching voltage to control various functions. Power is supplied to the relay coils from a single wire connected to the panel auxiliary power terminal 7. The module includes one relay and provides three additional sockets for expansion of up to four relays. Mount the 860 inside the panel enclosure using the 3-hole pattern and plastic standoffs. Refer to the 860 Module Install Sheet (LT-0484) as needed.

Relay Contact Rating: 1 Amp at 30 VDC

J23 6-Pin Header

14.1 Description

The XR500 Series Command Processor™ panel supports RS-232, LX-Bus, and DMP Wireless operation. Only one operation can function at a time. Install a jumper on one pair of J23 headers to indicate how the panel is programmed to operate. Refer to the table below when installing a jumper on J23. When a jumper is installed or moved on the 6-pin header, briefly reset the panel using the J16 jumper to activate the selected operation.

Note: Only one operation, RS-232, LX-Bus, or DMP Wireless can function at a time.

J23 6-Pin Header	
Letter	**Operation**
R	Standard RS-232
L	LX-Bus
X	1100 Series DMP Wireless

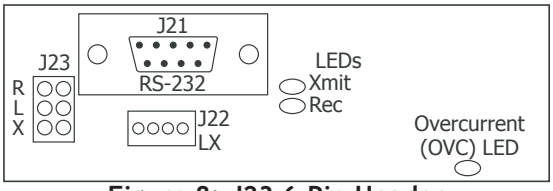


Figure 8: J23 6-Pin Header

J22 LX-Bus Expansion Connector

15.1 Description

The XR500 Series Command Processor™ Panel supports up to 500 wireless bus zones or up to five LX-Bus circuits. Each Interface card LX-Bus circuit provides 100 expansion zones. The maximum number of LX-Bus zones available on a fully populated panel is 500. Use LX-Bus J22 Header for 100 zones. Install a single Interface Card Connector on the board to support 100 additional zones for a total of 200 zones. To install up to five Interface Cards install a Model 461 Interface Adaptor Card.

15.2 J22 LX-Bus Header

Note: Only one connector, J21 or J22 can function at a time. Either use J21 to connect a serial device for PC Log Reporting, or use J22 to connect an LX-Bus or DMP Wireless device. Operation is determined by where you install the jumper on the J23 6-Pin header.

For each connection, respect wire colors when connecting devices and use all four wires. After placing the jumper on the J23 6-Pin header to enable the required operation, briefly reset the panel using the J16 jumper to activate operation.

Wireless Bus Operation: Place a jumper on the two pins next to the letter "X" on the J23 6-Pin header. When using J22 as a wireless bus, connect a DMP Model 300 4-wire Harness to the J22 4-pin header labeled LX. Connect the other end to the J3 header on the 1100X Wireless Receiver. This provides up to 500 wireless zones numbered 500 to 999. Refer to the 1100X Wireless Receiver Install Guide (LT-0708).

LX-Bus Operation: Place a jumper on the two pins next to the letter "L" on the J23 6-Pin header. When using J22 as an LX-Bus, connect a DMP Model 300 4-wire Harness to the J22 4-pin header labeled LX. This provides the first 100 LX-Bus zones numbered 500-599. No LX-Bus Interface Card is required.

Note: Do NOT use shielded wire when using the J22 LX-Bus Header.

The maximum distance for any one bus circuit (length of wire) is 2,500 feet regardless of the wire gauge. This distance can be in the form of one long wire run or multiple branches with all wiring totaling no more than 2,500 feet. As wire distance from the panel increases, DC voltage on the wire decreases. Maximum number of LX-Bus devices on the first 2,500 foot circuit is 25 when using the on-board J22 LX-Bus. For additional information refer to the 710/710F Installation Sheet (LT-0310) and or the LX-Bus/Keypad Bus Wiring Application Note (LT-2031).

RS-232 Operation: Place a jumper on the two pins next to the letter "R" on the J23 6-Pin header and refer to J21 Serial Connector on the next page.

15.3 LX-Bus Interface Cards

You can add one Interface Card (Model 481, 462N, 462P or 472) to the XR500 Series using J6 Interface Card Connector located on the board right edge. To add more than one Interface Card install a 461 Interface Adaptor Card using J6 Interface Card Connector on the board right edge. The 461 Adaptor Card allows you to install up to five Interface Cards. Refer to the 461 Installation Sheet (LT-0736). Each Interface card provides up to 100 LX-Bus Zones. Refer to the following tables to identify zone locations and numbers relative to J22 operation.

J22 LX-Bus Enabled (Set J23 to "L")			One Interface Card			461 Adaptor Card and Multiple Interface Cards	
LX-Bus	Zone Numbers		LX-Bus	Zone Numbers		LX-Bus	Zone Numbers
1	500-599	AND	2	600-699	OR	2 (A)	600-699
						3 (B)	700-799
						4 (C)	800-899
						5 (D)	900-999

J22 LX-Bus NOT Enabled (J23 NOT set to "L")	One Interface Card			461 Adaptor Card and Multiple Interface Cards	
	LX-Bus	Zone Numbers		LX-Bus	Zone Numbers
	1	500-599	OR	1 (A)	500-599
				2 (B)	600-699
				3 (C)	700-799
				4 (D)	800-899
				5 (E)	900-999

15.4 LX-Bus LEDs

The two LEDs, located near the bottom-right corner of J21 indicate data transmission and receipt. The top LED flashes green to indicate the panel is transmitting LX-Bus data. The bottom LED flashes yellow to indicate the panel is receiving LX-Bus data.

15.5 OVC LED

The Overcurrent LED (OVC) lights Red when the devices connected to the Keypad Bus and LX-Bus(es) draw more current than the panel is rated for. The OVC is located above Outputs 1 and 2 on the panel and turns a steady Red when lit. When the OVC LED lights Red, the LX-Bus(es) and Keypad bus shut down.

J21 Serial Connector

16.1 Description

Note: Only one connector, J21 or J22 can function at a time. Either use J21 to connect a serial device for PC Log Reporting, or use J22 to connect a DMP Wireless device or an LX-Bus device. Operation is determined by where you install the jumper on the J23 6-Pin header.

To enable J21 to operate in RS-232 mode, place a jumper on the two pins next to the letter "R" on the J23 6-Pin header and briefly reset the panel using the J16 jumper to activate the selected operation. Panel programming using Remote Link™ can be set up through a direct connection to a computer or through an iCOM connected to a network. The Serial Connector allows the following operation options.

XR500 Panel	XR500N/XR500E Panel
PC Log Reports	PC Log Reports
Remote Link™ Programming	Additional iCOM Installed for PC Log Reports

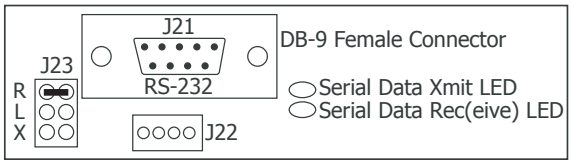


Figure 9: J21 Serial Connection

16.2 Computer Connection to J21

Use a straight through RS-232 Serial cable with a DB-9 female connector on one end and a DB-9 male connector on the other end. Plug the DB-9 male connector end of the cable onto the XR500 Series panel J21 RS-232 connector. Plug the DB-9 female connector end of the cable onto the DB-9 male connector located at the back of the computer. Program the XR500 Series panel as needed then disconnect the computer.

16.3 Direct iCOM Connection to J21

Use DMP Model 397 cable with a DB-9 female connector on one end and an RJ connector on the other end. Mount the iCOM in the panel enclosure. Refer to the iCOM Installation Guide (LT-0587). Plug the 397 cable DB-9 male connector end onto the XR500 Series panel J21 RS-232 connector. Plug the RJ connector into the iCOM J1 Network connector. Program the XR500 Series panel as needed.

16.4 Serial Connector LEDs

The two LEDs, located near the bottom-right corner of J21 indicate data transmission and receipt. The top LED flashes green to indicate the panel is transmitting serial data. The bottom LED flashes yellow to indicate the panel is receiving serial data.

J1 Ethernet Connector (XR500N/XR500E only)

17.1 Description

The J1 Ethernet Connector is available on the XR500N/XR500E Network version to connect directly to an Ethernet network using a standard patch cable.

17.2 Ethernet LEDs

The two LEDs, located to the left of J1 Ethernet Connector, indicate network operation. The top, Link LED flashes green to indicate the network traffic is good. The bottom, Activity LED flashes yellow to indicate messages are being sent and received.

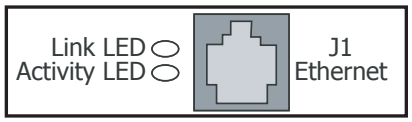


Figure 10: J1 Header and LEDs

J3 Telephone RJ Connector

18.1 FCC Registration

The Model XR500 Series complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the outside of the enclosure of this equipment is a label that contains, among other information, a product identifier in the format US:CCKAL00BXR500. If requested this number must be provided to the telephone company.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. See installation instructions for details.

The Ringer Equivalence Number (REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

If the XR500 Series causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with the Model XR500 Series, for repair or warranty information, please contact DMP at the address and telephone number listed on the back of this document. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

If your premises has specially wired alarm equipment connected to the telephone line, ensure the installation of the XR500 Series does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

Caution: To ensure proper operation, this equipment must be installed according to the installation instructions in this manual. To verify that the equipment is operating properly and can successfully report an alarm, this equipment must be tested immediately after installation, and periodically thereafter, according to the test instructions in this document and the XR500 Series Programming Guide (LT-0679). Additionally, verification of Line Seize capability should be made immediately after installation, and periodically thereafter, in order to ensure that this equipment can initiate a call even when other equipment (telephone, answering system, computer modem, etc.) connected to the same line is in use.

18.2 Description

Connect the panel to the public telephone network by installing a DMP 356 RJ Cable between the panel J3 connector and the RJ31X or RJ38X phone jack.

18.3 J10 893A Connector

Connect an 893A Dual Phone Line Module to J10 on the XR500 Series. Refer to the 893A Installation Sheet (LT-0135) for complete information.

18.4 Notification

The user must not repair registered terminal equipment. In case of trouble, immediately unplug the device from the telephone jack. The factory warranty provides for repairs. Registered terminal equipment may not be used on party lines or in connection with coin telephones. Notify the telephone company with the following information:

a. The particular line(s) where the service is connected

b. The FCC registration number as listed in Section 18.1

c. The ringer equivalence

d. The device make, model, and serial number

18.5 Phone Line Monitor

The XR500 Series panel has a built-in telephone monitor that monitors the phone line voltage to verify the connection to the central office. Figure 10 and the table below identify the phone block pin layout, wire numbers, and colors.

Wire Number	Wire Color
1	Gray
2	Orange
3	Black
4	Red
5	Green
6	Yellow
7	Blue
8	Brown

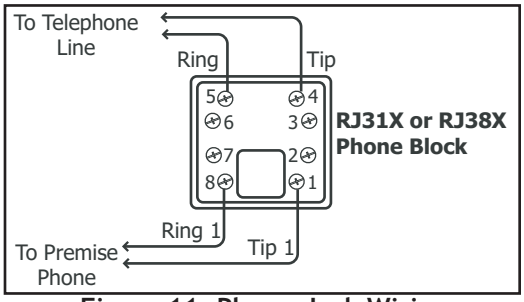


Figure 11: Phone Jack Wiring

The wires on the RJ31 that feed pins 4 and 5 should be the ONLY wires on the D-marc. All other house phone wiring should be tied to pins 1 and 8 coming back from the RJ31.

Dial tone must come into RJ31X on pins 4 and 5 and go back to house phones from pins 1 and 8. Follow these steps to determine if panel is seizing the line:

1. Unplug phone cord from RJ31X
2. Place butt-set on pins 4 and 5
3. Listen for dial tone. With dial tone present, lift either wire from pins 1 or 8
4. Listen for dial tone again. If the dial tone is present, RJ31X wiring is correct. If no dial tone is present, the RJ31X wiring is backwards. Rewire so dial tone is coming IN on 4 and 5.

If you still have trouble with the phone line, you may need to replace the RJ cord. If the dial tone is still not present, swap out the RJ31X phone block.

Reset and Tamper Headers

19.1 J16 Reset Header

The reset header is located just above the terminal strip on the right side of the circuit board and is used to reset the XR500 Series microprocessor. To reset the panel when first installing the system, install the reset jumper before applying power to the panel. After connecting the AC and battery, remove the reset jumper.

To reset the panel while the system is operational, for example, prior to reprogramming, install the reset jumper without powering down the system. Remove the reset jumper after one or two seconds.

After resetting the panel, begin programming within 30 minutes. If you wait longer than 30 minutes, you must reset the panel again.

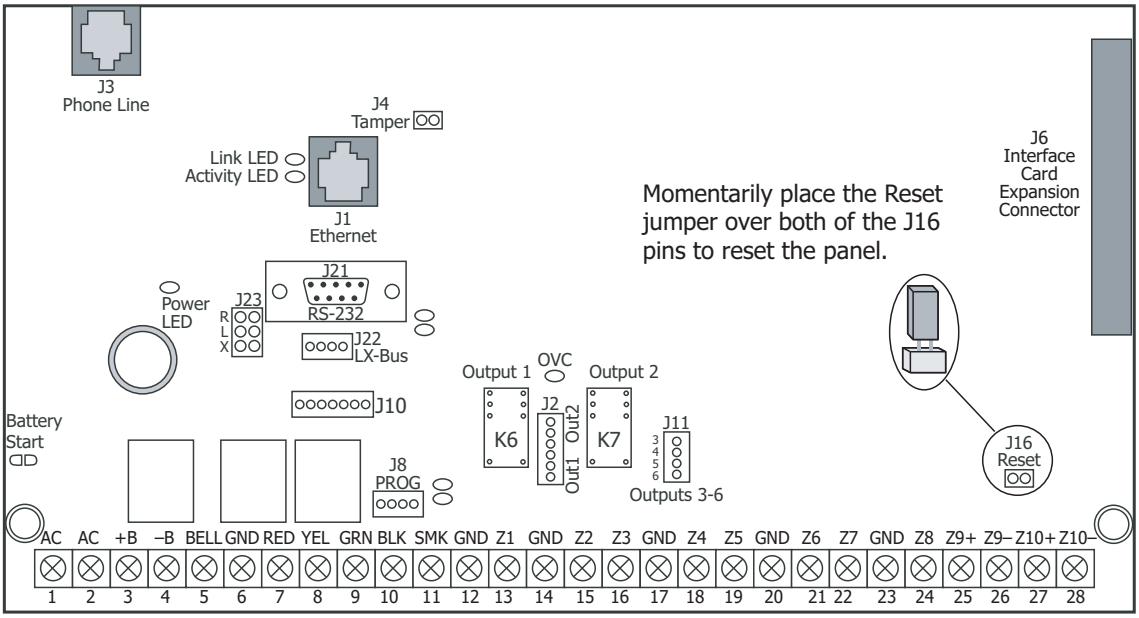


Figure 12: XR500 Series Panel Showing the Reset Jumper

19.2 J4 Tamper Header

The J4 header is for use with the optional DMP 306 Tamper Harness. The harness connects to one or more tamper switches mounted inside the panel enclosure to supervise against unauthorized enclosure opening or removal. Refer to the wiring diagram on the enclosure door for correct tamper switch wiring.

How the Tamper Works

If the enclosure is opened or removed while one or more of the system areas are armed, a panel tamper alarm is indicated. If all areas are disarmed, a panel tamper trouble is indicated.

Universal Burglary Specifications

20.1 Introduction
The programming and installation specifications contained in this section must be completed when installing the XR500 Series panel in accordance with any of the burglary standards. Additional specifications may be required by a particular standard.

20.2 Wiring
All wiring must be in accordance with NEC, ANSI/NFPA 70, ANSI/UL 681, and ANSI/UL 827 for all burglary installations. All transformer wires must be installed in conduit.

20.3 Control Outside of Protected Area
A Potter EVD or Sentrol 5402 should be used in place of a lined cabinet when the panel is installed outside of the protected area. Front and rear tamper switches are required. Refer to the system wiring diagram.

20.4 Police Station Phone Numbers
The digital dialer telephone number programmed for communication must not be a police station phone number.

20.5 Bypass Reports
The Bypass Reports option must be programmed as YES for all listed burglary applications. See the XR500 Series Programming Guide (LT-0679).

20.6 System Maintenance
To ensure continuous satisfactory operation of any alarm system, proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential. Offering a maintenance program and acquainting the user with the correct procedures for system use and testing is also the responsibility of the installing alarm company.

20.7 Listed Receivers
Operation has been verified with the DMP SCS-1R, Sur-Gard SG-HLR2-DG, FBII CP220PB, Osborne-Hoffman Quick-Alert, and Radionics D6500 receivers. It is the installer's responsibility to verify compatibility between the XR500 Series and the receiver used during installation. The installer shall verify the compatibility of the receiver and the system on a yearly basis.

20.8 Power Supply Supervision
For commercial burglary applications the power supply for all local bells shall be under 24-hour protection. Refer to section 6 in this document.

20.9 Wireless Tamper
The Zone Information Disarmed Open Message to Transmit must be programmed Trouble (T). See the XR500 Series Programming Guide (LT-0679). (Not applicable to ANSI/UL 1023).

20.10 Wireless External Contact
When used, the External Contact of 1101 or 1102 must be programmed Normally Closed. See the XR500 Series Programming Guide (LT-0679).

20.11 Wireless Supervision Time
The Zone Information Supervision Time cannot be set to 0 (zero). See the XR500 Series Programming Guide (LT-0679).

20.12 Detect Wireless Jamming
The Detect Wireless Jamming option must be programmed YES. See the XR500 Series Programming Guide (LT-0679). (Not applicable to ANSI/UL 1023).

Area Information

21.1 Ownership
The control unit system shall be under one ownership.

21.2 Annunciation
The System shall be installed so that when arming any area from any keypad, the local bell shall annunciate.

21.3 Trouble Display
The Status List programming shall be set to annunciate all trouble messages at all keypads. See the XR500 Series Programming Guide (LT-0679).

21.4 Closing Wait
The Closing Wait option must be programmed YES. See the XR500 Series Programming Guide (LT-0679).

21.5 Local Bell Supervision
When a local bell is employed, the power supply for the bell shall be under 24-hour protection. Proper personnel for maintenance or security of the system shall be able to disarm that area.

ANSI/UL 1023 Specifications
Household Burglar-Alarm System Units

22.1 Audible Devices
At least one listed audible device (Ademco AB12M) rated to operate over the voltage rate of 11.7 VDC to 12.8 VDC and rated at 85 DB minimum must be used.

22.2 Auxiliary Circuits
At least one burglary alarm initiating device shall be used on the system. If the voltage for the device is applied by the control unit the burglary alarm initiating device shall be rated to operate over the range of 11.5 VDC to 12.7 VDC.

22.3 Bell Cutoff
The Bell Cutoff time cannot be less than five minutes. See the XR500 Series Programming Guide (LT-0679).

22.4 Entry Delay
The maximum entry delay used must not be more than 45 seconds. See the XR500 Series Programming Guide (LT-0679).

22.5 Exit Delay
The maximum exit delay used must not be more than 60 seconds. See the XR500 Series Programming Guide (LT-0679).

22.6 Weekly Test
The product should be tested weekly.

22.7 Wireless Audible Annunciation Option
The Wireless Audible option must be selected as DAY for residential applications.

ANSI/UL 1610 AND ANSI/UL 1076 Specifications

Central-Station and Proprietary Burglar-Alarm Units

23.1 Opening/Closing Reports

The Opening/Closing Reports option must be programmed as YES. See the XR500 Series Programming Guide (LT-0679).

23.2 Closing Wait

The Closing Wait option must be programmed YES. See the XR500 Series Programming Guide (LT-0679).

23.3 Entry Delay

The maximum entry delay used must not be more than 60 seconds when using Model 350A Attack Resistant Housing. See the XR500 Series Programming Guide (LT-0679).

23.4 Exit Delay

The maximum exit delay used must not be more than 60 seconds. See the XR500 Series Programming Guide (LT-0679).

23.5 Proprietary Dialer

The Model XR500 Series provides proprietary service when configured as a digital dialer.

23.6 DACT Central Station

DACT Central Station service can be provided under by adding an Ademco AB12M bell and bell housing and placing the Model XR500 Series panel into Model 350A Attack Resistant Housing.

23.7 Bell Cutoff

The Bell Cutoff time cannot be less than 15 minutes. See the XR500 Series Programming Guide (LT-0679).

23.8 Standard or Encrypted Line Security

Standard Line Security is provided when configured as a Path 1 NET system using an XR500N panel or an XR500 panel with an iCOM™ Network Alarm Router (232). The NET Check-in time must be set to 06 minutes or RDM. When programmed for Standard Line Security, Exit Time Restart is disabled. When a dialer is required for 06 minute check-in time, an attack resistant enclosure (DMP Model 350A) is required. When the check-in time is set to a number less than 200 seconds, an attack resistant enclosure is not required. See sections 3.2, 3.2.1, and 3.3 of the XR500 Series Programming Guide (LT-0679).

To provide Encrypted Line security, install an XR500E panel or an XR500 panel with an iCOM-E™ Encrypted Network Alarm Router.

For Encrypted Line security operation, communication between the Premise and Supervising Station provides 128 bit encryption when using an XR500E panel or an XR500 panel with an iCOM-E Encrypted Network Alarm Router.

The Model XR500 Series Protected Premises Control Unit is suitable for Standard Line Security service when configured for NET communication with SCS-1R receiving system. This configuration is approved for the following:

AMCX - Central Station Alarm Units
APOU - Proprietary Alarm Units

23.9 Wireless Audible Annunciation Option

The Wireless Audible option must be selected as ANY for commercial applications.

23.10 Model 463G CELL Only, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using CELL with no backup. XR500 cellular communication is used as primary with a 3 minute check-in when armed or disarmed.

Path 1 programming	
Comm Type: = CELL	Checkin: = 3 minute
Path Type: = Primary	Fail Time: = 3 minute
Encrypt: = NO or YES*	Test Rpt: = NO
Sub Code: = NO or YES	

*For Encrypted Line Security, program a Passphrase in Network Options.

23.11 Model 463G CELL with Dialer Backup, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using CELL with DD (digital dialer) as a backup. XR500 cellular communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. The digital dialer sends a daily test signal and is backup.

Path 1 programming	Path 2 programming
Comm Type: = CELL	Comm Type: = DD
Path Type: = Primary	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Duplicate Alarms: = YES
Encrypt: = NO or YES*	
Sub Code: = YES	

*For Encrypted Line Security, program a Passphrase in Network Options.

23.12 Model 463G NET with CELL as Alternate Primary and Dialer Backup, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided using NET communication with CELL as an alternate primary and with digital dialer as a backup. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the NET primary path become disabled, CELL adapts the same check-in time programmed for the primary communication and becomes an alternate primary path. The dialer path is used as the backup if both NET and CELL fail to receive acknowledgement from the receiver.

This method of operation causes the CELL alternate primary to adapt to the 6 minute NET primary check-in rate when the NET primary is unavailable maintaining line supervision and precludes the need for a central station runner to respond to the NET primary failure.

Path 1 programming	Path 2 programming	Path 3 programming
Comm Type: = NET	Comm Type: = CELL	Comm Type: = DD
Path Type: = Primary	Path Type: = Backup (operates as alternate primary)	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Checkin: = ADAPT	Duplicate Alarms: = YES
Encrypt: = NO or YES*	Encrypt: = NO or YES*	
Sub Code: = YES	Sub Code: = Shared	

*For Encrypted Line Security, program a Passphrase in Network Options.

23.13 Model 463G NET with CELL as Backup and Adaptive Primary, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using NET communication and CELL as backup and as needed adapts and takes over as primary. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the primary path become disabled, the CELL adapts to a special 3 minute check-in time and because of that check-in rate becomes the primary without the requirement of a backup. This method of operation causes the CELL backup to adapt to the 3 minute check-in rate when the NET primary is unavailable becoming a standalone primary without the need for a backup. This maintains line supervision and precludes the need for a central station runner to respond to the NET primary failure.

Path 1 programming	Path 2 programming
Comm Type: = NET	Comm Type: = CELL
Path Type: = Primary	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Checkin: = ADAPT3
Encrypt: = NO or YES*	Encrypt: = NO or YES*
Sub Code: = YES	Duplicate Alarms: = YES
	Sub Code: = Shared

*For Encrypted Line Security, program a Passphrase in Network Options.

ANSI/UL 636 Specifications

Holdup Alarm Units

24.1 ANSI/UL 1610 Required

The programming and installation specifications contained in this section must be completed in addition to ANSI/UL 1610 Specifications when installing a Model 1142 with a Model XR500 Series panel.

24.2 1100X Wireless Receiver

The Model 1100X Wireless Receiver in conjunction with the Model 1142 Holdup Alarm Transmitter must be installed in the system.

24.3 Wireless Supervision Time

The Zone Information Supervision Time must be a maximum of 240 minutes. See the XR500 Series Programming Guide (LT-0679).

24.4 LED Display

The LED Operation option display must be set to NO when using a Model 1142 Holdup Alarm Transmitter. See the XR500 Series Programming Guide (LT-0679).

24.5 Jamming Detection

The Detect Wireless Jamming option must be set to YES. See the XR500 Series Programming Guide (LT-0679).

24.6 Local Alarm

The Bell Action for a PN (Panic) type zone must be programmed as N (None). See the XR500 Series Programming Guide (LT-0679).

24.7 Message to Transmit

The Armed Open and Armed Short messages for a PN (Panic) type zone must be programmed to A (Alarm). See the XR500 Series Programming Guide (LT-0679).

24.8 Wireless Audible Annunciation Option

The Wireless Audible option must be selected as ANY for commercial applications.

ANSI/UL 1635 Specifications

Digital Burglar Alarm Communicator System Units

25.1 System Trouble Display

The Status List Display must include at least one keypad that displays system monitor troubles. See the XR500 Series Programming Guide (LT-0679).

25.2 Digital Dialer Telephone Number

Both programmed telephone numbers must begin with a P. See the XR500 Series Programming Guide (LT-0679).

25.3 Test Time

The Test Time option must be programmed so that the XR500 Series sends a report once every 24 hours. See the XR500 Series Programming Guide (LT-0679).

25.4 Closing Wait

The Closing Wait option must be programmed YES. See the XR500 Series Programming Guide (LT-0679).

ANSI/UL 365 Specifications

Police Station Connected and Local Burglar Alarm Units and Systems

26.1 System Trouble Display

The Status List Display must include at least one keypad that displays system monitor troubles. See the XR500 Series Programming Guide (LT-0679).

26.2 Entry Delay

The maximum entry delay used must not be more than 60 seconds when using Model 350A Attack housing. See the XR500 Series Programing Guide (LT-0679).

26.3 Exit Delay

The maximum exit delay used must not be more than 60 seconds. See the XR500 Series Programming Guide (LT-0679).

26.4 Bell

A local audible signal appliance must be used such as Ademco AB12M bell and bell housing.

26.5 Bell Cutoff

The Bell Cutoff time cannot be less than 15 minutes. See the XR500 Series Programming Guide (LT-0679).

26.6 Automatic Bell Test

The Automatic Bell Test option must be programmed as YES. See the XR500 Series Programming Guide (LT-0679).

26.7 Line Security for Police Connect

Basic line security is provided when the Model XR500 Series is configured as a dialer system.

26.8 Standard or Encrypted Line Security

Standard Line Security is provided when configured as a Path 1 NET system using an XR500N panel or an XR500 panel with an iCOM™ Network Alarm Router. The NET Check-in time must be set to 06 minutes or RDM. When programmed for Standard Line Security, Exit Time Restart is disabled. When a dialer is required for 06 minute check-in time, an attack resistant enclosure (DMP Model 350A) is required. When the check-in time is set to a number less than 200 seconds, an attack resistant enclosure is not required. See sections 3.2, 3.2.1, and 3.3 of the XR500 Series Programming Guide (LT-0679).

To provide Encrypted Line security, install an XR500E panel or an XR500 panel with an iCOM-E™ Encrypted Network Alarm Router.

For Encrypted Line security operation, communication between the Premise and Supervising Station provides 128 bit encryption when using an XR500E panel or an XR500 panel with an iCOM-E Encrypted Network Alarm Router.

26.9 Wireless Audible Annunciation Option

The Wireless Audible option must be selected as ANY for commercial applications.

26.10 Model 463G CELL Only, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using CELL with no backup. XR500 cellular communication is used as primary with a 3 minute check-in when armed or disarmed.

Path 1 programming	
Comm Type: = CELL	Checkin: = 3 minute
Path Type: = Primary	Fail Time: = 3 minute
Encrypt: = NO or YES*	Test Rpt: = NO
Sub Code: = NO or YES	

*For Encrypted Line Security, program a Passphrase in Network Options.

26.11 Model 463G CELL with Dialer Backup, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using CELL with DD (digital dialer) as a backup. XR500 cellular communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. The digital dialer sends a daily test signal and is backup.

Path 1 programming	**Path 2 programming**
Comm Type: = CELL	Comm Type: = DD
Path Type: = Primary	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Duplicate Alarms: = YES
Encrypt: = NO or YES*	
Sub Code: = YES	

*For Encrypted Line Security, program a Passphrase in Network Options.

26.12 Model 463G NET with CELL as Alternate Primary and Dialer Backup, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided using NET communication with CELL as an alternate primary and with digital dialer as a backup. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the NET primary path become disabled, CELL adapts the same check-in time programmed for the primary communication and becomes an alternate primary path. The dialer path is used as the backup if both NET and CELL fail to receive acknowledgement from the receiver.

This method of operation causes the CELL alternate primary to adapt to the 6 minute NET primary check-in rate when the NET primary is unavailable maintaining line supervision and precludes the need for a central station runner to respond to the NET primary failure.

Path 1 programming	Path 2 programming	Path 3 programming
Comm Type: = NET	Comm Type: = CELL	Comm Type: = DD
Path Type: = Primary	Path Type: = Backup (operates as alternate primary)	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Checkin: = ADAPT	Duplicate Alarms: = YES
Encrypt: = NO or YES*	Encrypt: = NO or YES*	
Sub Code: = YES	Sub Code: = Shared	

*For Encrypted Line Security, program a Passphrase in Network Options.

26.13 Model 463G NET with CELL as Backup and Adaptive Primary, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using NET communication and CELL as backup and as needed adapts and takes over as primary. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the primary path become disabled, the CELL adapts to a special 3 minute check-in time and because of that check-in rate becomes the primary without the requirement of a backup. This method of operation causes the CELL backup to adapt to the 3 minute check-in rate when the NET primary is unavailable becoming a standalone primary without the need for a backup. This maintains line supervision and precludes the need for a central station runner to respond to the NET primary failure.

Path 1 programming	Path 2 programming
Comm Type: = NET	Comm Type: = CELL
Path Type: = Primary	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Checkin: = ADAPT3
Encrypt: = NO or YES*	Encrypt: = NO or YES*
Sub Code: = YES	Duplicate Alarms: = YES
	Sub Code: = Shared

*For Encrypted Line Security, program a Passphrase in Network Options.

ANSI/UL 609 Specifications

Police Station Connected and Local Burglar Alarm Units and Systems

27.1 Mercantile

For Mercantile and Police Station Connect operation the Model XR500 Series must be mounted in an Attack Resistant Housing, (DMP Model 350A).

27.2 Entry Delay

The maximum entry delay used must not be more than 60 seconds when using the Model 350A housing. See the XR500 Series Programing Guide (LT-0679).

27.3 Exit Delay

The maximum exit delay used must not be more than 60 seconds. See the XR500 Series Programming Guide (LT-0679).

27.4 Mercantile Safe and Vault

When the DMP Model 350A housing is used, the XR500 Series provides operation as a mercantile safe and vault alarm. Bell Supervision and wiring must be in accordance with ANSI/UL 681. When the XR500 Series is mounted outside the safe or vault, tamper protection and the Sentrol Model 5402 or Potter EVD listed vibration detectors should be used.

27.5 Bell

A local audible signal appliance must be used such as Ademco AB12M bell and bell housing.

27.6 Bank Safe and Vault (XR500N/XR500E only)

In addition to the requirements for Mercantile Safe and Vault in section 26.4, the following must be done for Bank Safe and Vault systems. The Bank Safe and Vault option must be programmed as YES. See the XR500 Series Programming Guide (LT-0679). The 72 hour battery standby must be provided. A Rothenbuhler Model 5110 High Security Bell must be used. See section 32.6 wiring diagram.

27.7 Wireless Audible Annunciation Option

The Wireless Audible option must be selected as ANY for commercial applications.

ANSI/UL 294 Specifications

Access Control System Units

28.1 Panel Designation

The XR500 Series panels are designated stand alone units.

28.2 Tamper Protection

For listed Access Control installations, a tamper switch must be used.

28.3 Compatible Devices

The following devices are compatible with the XR500 Series panels.

Access Control	
733 Wiegand Interface Module	Proximity reader connector
734 Wiegand Interface Module	Proximity reader connector
OP-08CB Motion Detector	Infrared sensor
* PB-2 REX Button	Exit control push button
PP-6005B Proxpoint Plus® Reader	Proximity reader
MP-5365 Miniprox® Reader	Slimline proximity reader
PR-5455 ProxPro® II Reader	Long range reader with sounder
MX-5375 Maxi-Prox™ Reader	Long range reader compatible with 1351 Prox Pass
*** This device has not been investigated and shall not be used in listed installations.**	

Universal Fire Alarm Specifications

29.1 Introduction

The programming and installation specifications contained in this section must be completed when installing the Model XR500 Series in accordance with any of the ANSI/UL or NFPA fire standards. Additional specifications may be required by a particular standard.

29.2 Wiring

All wiring must be in accordance with NEC, ANSI/NFPA 70.

29.3 Transformer
A wire-in transformer should be used. Use the Model 322 wire-in 16 VAC 56 VA transformer or Model 327 plug-in 16 VAC 50 VA transformer installed inside an ES501 Enclosure with all wiring in conduit. The transformer must be mounted within 20 feet of the panel and connected by conduit.

29.4 End-of-Line Resistor
The DMP Model 310 1k Ohm EOL resistor should be used on all 1k Ohm EOL fire zones.

29.5 System Trouble Display
The Status List Display must include at least one keypad that displays system monitor troubles. See the XR500 Series Programming Guide (LT-0679).

29.6 Fire Display
The Status List Display must include at least one keypad that displays troubles and alarms on fire type zones. See the XR500 Series Programming Guide (LT-0679).

29.7 Police Station Phone Number
The digital dialer telephone number programmed for communication must not be a police station phone number, unless that phone number is specifically provided for that purpose.

29.8 System Maintenance
To ensure continuous satisfactory operation of any alarm system, proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential. Offering a maintenance program and acquainting the user with the correct procedures for system use and testing is also the responsibility of the installing alarm company.

29.9 Audible Alarm
Fire Type zones must be programmed to activate an audible alarm. The Bell Action for Fire Type zones must not be programmed as N (None). See the XR500 Series Programming Guide (LT-0679).

29.10 Fire Zone Programming
If a retard delay is used on a waterflow zone, it cannot exceed 90 seconds and any retard delay in the waterflow initiating devices must be subtracted from the 90 seconds allowed. See the XR500 Series Programming Guide (LT-0679). The retard delay should not be used on a zone with smoke detectors.

29.11 Class A Style D Zones
If required, the DMP 869 Dual Style D Initiating Module provides for connection of two Class A Style D zones to the Model XR500 Series. See the 869 Installation Guide (LT-0186) and sections 20.2 and 28.2 of this guide for wiring information.

29.12 Video Option
The Video option must be selected as NO when any fire protection is connected to the XR500 Series. See the XR500 Series Programming Guide (LT-0679).

29.13 Listed Receivers
Use the DMP SCS-1R (SDLC), Sur-Gard SG-HLR2-DG (CID), FBII CP220PB (CID), and Osborne-Hoffman Quick-Alert (CID) receivers.

ANSI/UL 864 NFPA 72 (Chapter 9) Specifications
Control Units for Fire-Protective Signaling Systems

30.1 Zone Restoral Reports
The Restoral Reports option must be selected as YES or Disarm. See the XR500 Series Programming Guide (LT-0679).

30.2 Power Fail Delay
The Power Fail Delay option must be selected as required by the service of the panel. For Central Station service: 6-12, for Remote Station service: 12-15. See the XR500 Series Programming Guide (LT-0679).

30.3 Sprinkler Supervisory

Any zone used for sprinkler supervisory must be programmed with "SPRINKLR XXX" as the zone name. The last three characters in the zone name may be assigned a number to identify the zone. The Model 893A Dual Phone Line Module must be used on all sprinkler supervisory systems.

30.4 DACT Systems

Two phone lines must be used. The two phone lines cannot be ground start or party lines. The 893A Dual Phone Line Module is used to provide two phone line connections to the system. The 2ND Phone Line communication option must be selected as DD. See the XR500 Series Programming Guide (LT-0679).

Two different phone numbers must be programmed for digital communication. See the XR500 Series Programming Guide (LT-0679). The Test Time option must be programmed so that the XR500 Series sends a report every 24 hours. See the XR500 Series Programming Guide (LT-0679).

30.5 Local Protective Signaling Systems

The DMP Model 865, 866, or 867 Notification Circuit Module must be used on the bell circuit for detection of shorts and grounds. Any burglary or other off premises communication must be done with the Model 893A Dual Phone Line Module. For local commercial fire installations, the 893A is required.

30.6 Remote Station Protective Signaling Systems

You must provide 60 hours of standby battery. See section 6.9 in this guide for standby battery calculations. Two Radionics Model D127 Reversing Relay Modules provide two reversing polarity telephone connections. See the D127 Installation Instruction sheet for wiring details. A DMP Model 893A is used to provide two line dialer communication.

30.7 Fire Protective Signaling Systems using Internet/Intranet Networks

The XR500 Series Command Processor™ Panel must be programmed as described below for Fire Protective Signaling Systems using NET Communication Type or an iCOM™ Network Alarm Router for communication. Refer to the iCOM™ Network Alarm Router Installation Sheet (LT-0587) for more information.

- UL AA must be programmed as NO
- SUB CODE must be programmed as YES
- CHECKIN must be programmed as 1
- RETRY TIME must be programmed as 1
- FAIL TIME must be programmed as 1
- NET TRBL must be programmed as YES

30.8 Combination Systems

For combination fire and burglary systems, powered burglary devices (PIR, Glassbreak, etc.) must be powered from a separate listed power supply (DMP Model 505-12). This requirement is not needed for non-powered burglary devices (door contacts, etc.) which only connect to the zone input of zone expanders or keypads. Refer to Powered Burglary Devices later in this document.

30.9 Remote Annunciators

At least one Model 630F Remote Annunciator must be used on the system. All fire alarms, fire troubles and supervisory alarms or troubles must be annunciated only on the 630F. All burglary alarms or troubles must only be annunciated on non-fire keypads. See Status List options of the XR500 Series Programming Guide (LT-0679).

ANSI/UL 985 NFPA 72 (Chapter 2) Specifications

Household Fire Warning System Units

31.1 Bell Output Definition

The Model XR500 Series panel Bell Output must be programmed to operate steady on burglary alarms and pulsed or temporal on fire alarms. See the XR500 Series Programming Guide (LT-0679).

31.2 Audible Devices

At least one listed audible device rated to operate over the voltage rate of 11.7 VDC to 12.8 VDC and rated at 85 DB minimum must be used.

31.3 Auxiliary Circuits

At least one fire alarm initiating device shall be used on the system. If the voltage for the device is applied by the control unit the fire alarm initiating device shall be rated to operate over the range of 11.5 VDC to 12.7 VDC.

31.4 Bell Cutoff

The Bell Cutoff time cannot be less than five minutes. See the XR500 Series Programming Guide (LT-0679).

31.5 Detect Wireless Jamming
The Detect Wireless Jamming option must be programmed YES. See the XR500 Series Programming Guide (LT-0679).

31.6 Wireless External Contact
When used, the External Contact of 1101 or 1102 must be programmed Normally Closed. See the XR500 Series Programing Guide (LT-0679).

31.7 Wireless Supervision Time
The Zone Information Supervision Time must be 240 minutes. See the XR500 Series Programing Guide (LT-0679).

31.8 Wireless Fire Verification
When used, the Model 1161 and 1162 wireless smoke detectors must not be programmed as Fire Verification (FV) zone type. See the XR500 Series Programing Guide (LT-0679).

California State Fire Marshal Specifications

32.1 Bell Output Definition
The Model XR500 Series panel Bell Output must be programmed to operate steady on burglary alarms and pulsed, temporal, or California School Code on fire alarms. See the XR500 Series Programming Guide (LT-0679).

New York City (MEA) Specifications

33.1 Introduction
The programming and installation specifications contained in this section must be completed when installing the XR500 Series panel for New York City (MEA) fire alarm installations that provide a digital dialer with network IP communication as backup. Fire alarm installations that use two digital dialer telephone lines do not need to comply with these specifications.

33.2 Digital Dialer and Network Communication
When used with a central office communicator or a transmitter, the installation and operation of the equipment and devices shall comply with 3RCNY 17-01. The installation shall employ the digital dialer as the primary communicator (using telephone line) with network IP communication as backup or secondary means of communication. It shall have the capability of transmitting separate and distinct signals to indicate manual pull station alarm, automatic detection alarm, sprinkler waterflow alarm, supervisory signal indications and trouble indications.

33.3 Wiring
All wiring must be in accordance with NEC, ANSI, and NFPA 70. All network cabling must be installed in accordance with NFPA 70 for communication circuits.

33.4 Communication Programming
For digital dialer communication with supervised network backup, program the following:

COMM TYPE = NET
SECOND LINE = DD
RECEIVER 1
  ALARMS = YES
  FIRST PHONE NUMBER = Central Station Receiver Phone Number
RECEIVER 2
  ALARMS = YES
  FIRST PHONE NUMBER = Central Station Receiver Phone Number

See the XR500 Series Programming Guide (LT-0679).

33.5 Additional Requirements
Program and install the equipment to comply with NFPA basic fire requirements. Refer to the Universal Fire Alarm Specifications and ANSI/UL 864 NFPA 72 (Chapter 9) Specifications earlier in this document.

False Alarm Reduction Programmable Options *

34.1 Shipping Defaults and Recommended Programming for ANSI/SIA CP-01-2000

SIA CP-01 FEATURE PARAGRAPH # AND DESCRIPTION	DMP XR500 PROGRAMMING GUIDE LT-0679 SECTION #	REQUIREMENT	RANGE	SHIPPING DEFAULT	RECOMMENDED PROGRAMMING*
4.2.2.1 Exit Time	15.2 Exit Delay	Required (Programmable)	45 sec. - 250 sec.	60 Seconds	60 Seconds
4.2.2.2 Progress Annunciation	15.2 Exit Delay	Allowed	Individual keypads may be disabled per zone	All keypads enabled	All keypads enabled
4.2.2.3 Exit Time Restart	15.2 Exit Delay	Required Option	For re-entry during exit time	Enabled	Enabled
4.2.2.5 Auto Stay Arm on Unvacated Premises	33.3 Occupied Premise - See XR500 Install Guide (LT-0681)	Required Option (except for remote arming)	Area 1 = Perimeter Area 2 = Interior	Enabled	Enabled for Residential Applications
4.2.4.4 Exit Time and Progress Annunciation/ Disable - for Remote Arm	Not Available on Remote Arming	Allowed Option	Progress Annunciation Always disabled for Remote Arming	Not Available	Remote Arming not allowed for CP-01 installations.
4.2.3.1 Entry Delay(s)	8.3 Entry Delay	Required (Programmable)	30 sec. – 240 Sec. **	30 Seconds	At least 30 Seconds **
4.2.5.1 Abort Window – for Non-Fire Zones	3.7 Transmit Delay	Required Option	Disable by zone or zone type	Enabled NT DY EX Zone	Enabled
4.2.5.1 Abort Window Time – for Non-Fire Zones	3.7 Transmit Delay	Required (Programmable	15 sec. - 45 sec. **	30 Seconds	At least 15 Seconds **
4.2.5.1.2 Abort Annunciation	3.7 Transmit Delay	Required Option	Annunciate that no alarm was transmitted (S45)	Yes	Yes
4.2.5.4.1 Cancel Annunciation	Always Enabled - Not Programmable	Required Option	Annunciate that a Cancel was transmitted (S49)	Always Enabled	Yes
4.2.6.1 & 4.2.6.2 Duress Feature	User Code + 1 = Ambush Code Not Available	Allowed Option	No 1 + derivative of another user code/no duplicates with other user codes	Code +1 Always Disabled	Not Programmable
4.3.1 Cross Zoning	16.22 Cross Zone	Required Option	Yes/No Zone Programming	No	Enabled using two or more programmed zones
4.3.1 Programmable Cross Zoning Time	8.4 Cross Zone Time	Allowed	4 sec. - 250 sec.	4 Seconds	Per walk path in protected premises
4.3.2 Swinger Shutdown	8.7 Swinger Bypass Trips	Required (Programmable)	For all non-fire zones, shut down at 1 or 2 trips	One (1) trip	One (1) trip
4.3.2 Swinger Shutdown Disable	16.16 Swinger Bypass	Allowed	For non-police response zones	Yes	Enabled (all zones)
4.3.3 Fire Alarm Verification	16.4 Zone Type	Required Option	FV Type Zone	No	Yes as required (unless sensors can self verify)
4.5 Call Waiting Cancel	3.19 Telephone Number	Required Option	Include *70P in Telephone Number	Disabled	Enabled if user has call waiting

* Programming at installation may be subordinate to other UL requirements for the intended application.
** For UL Installations, combined Entry Delay and Transmit Delay should not exceed 1 minute.

False Alarm Reduction Programmable Options (continued)

34.2 Call Waiting (ANSI/SIA CP-01-2000)

The Call Waiting default setting is disabled. To cancel the Call Waiting feature, program * (star) 7 0 P (pause), the standard telephone code prefix that cancels call waiting, into the telephone number string. Cancel Call Waiting for telephone lines that have Call Waiting operational on the telephone line. See the XR500 Series Programming Guide (LT-0679).

Caution: A call waiting cancel programmed on a non-call waiting telephone line, would prevent communication to the central station.

34.3 Occupied Premise (ANSI/SIA CP-01-2000)

When only two areas are used, and area one is named Perimeter, and area two is named Interior, and no exit type zone transition occurs during the exit delay because the premise continues to be occupied, the Interior area will automatically disarm at the end of the exit delay.

34.4 Entry Delay (ANSI/SIA CP-01-2000)

Only use Entry Delay 1. Do not use Entry Delay 2, 3, or 4. See the XR500 Series Programming Guide (LT-0679).

34.5 Minimum Installation Requirements (ANSI/SIA CP-01-2000)

SIA CP-01-2000 minimum system installation requirements include an XR500, a listed local Bell, and off premise DACT communication to an SCS-1R receiver plus one of the following compatible keypads.

630F Fire Command™ Center
690/690F, 790/790F Security Command™ keypads
693/793 Easy Entry™ keypads
7060, 7063, 7070, or 7073 Thinline™ keypads
7060A, 7063A, 7070A, or 7073A Aqualite™ keypads
7160, 7163, 7170, or 7173 Thinline™ keypads
7760 Clear Touch™ keypad

ULC S304 Specifications

Signal Receiving Center and Premise Burglar Alarm Control Units

35.1 Level V Communication

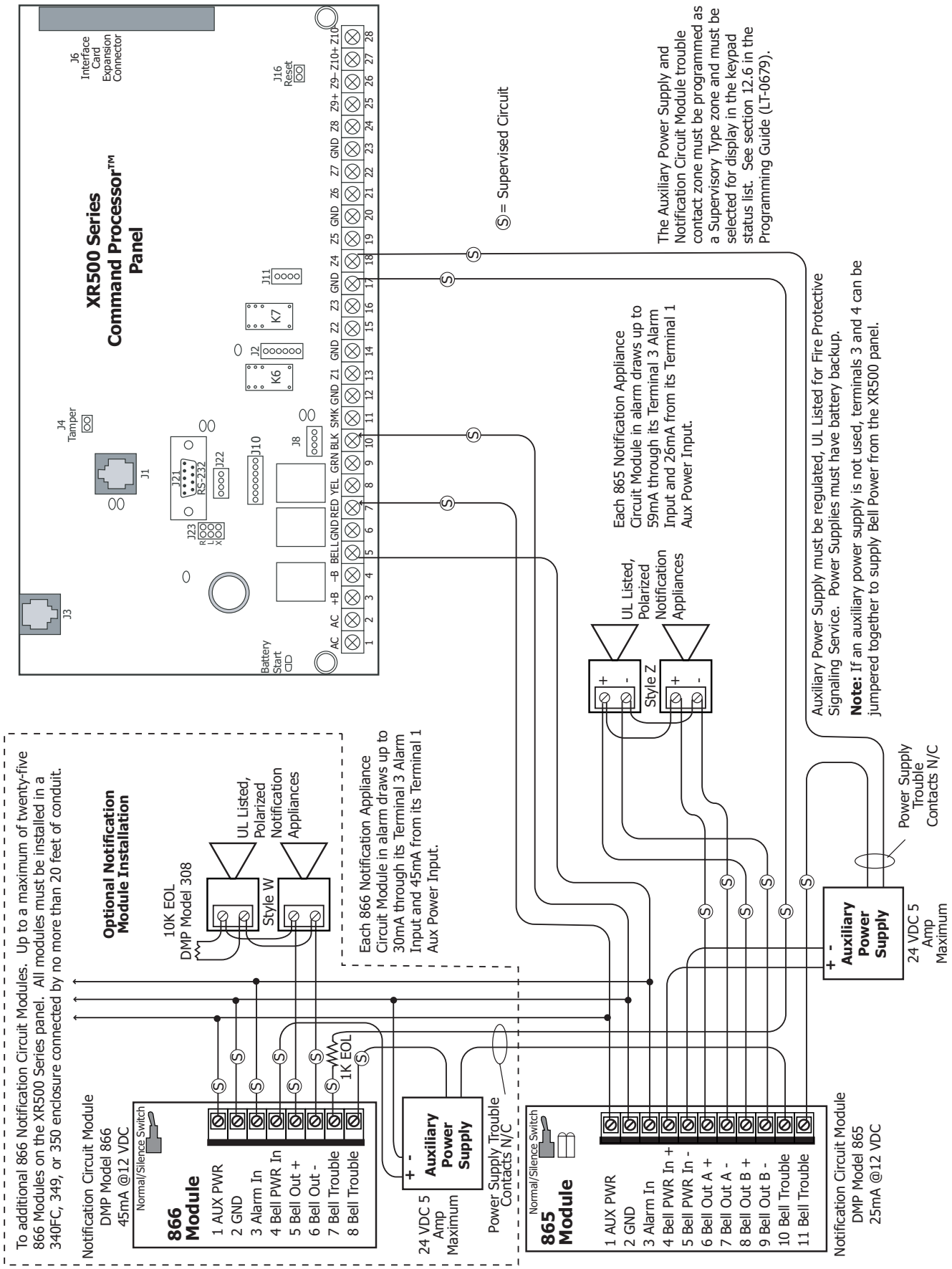
Level V communication channel security is provided for Internet, Intranet, LAN or WAN networks when configured as a NET communicating system using the XR500N. Additionally, the following options must be programmed in XR500 Series panel Communication:

SUB CODE: YES
CHECKIN TIME: 2 MINUTES
FAIL TIME: 3 MINUTES
NETWORK TROUBLE: YES
TCP COMM: YES

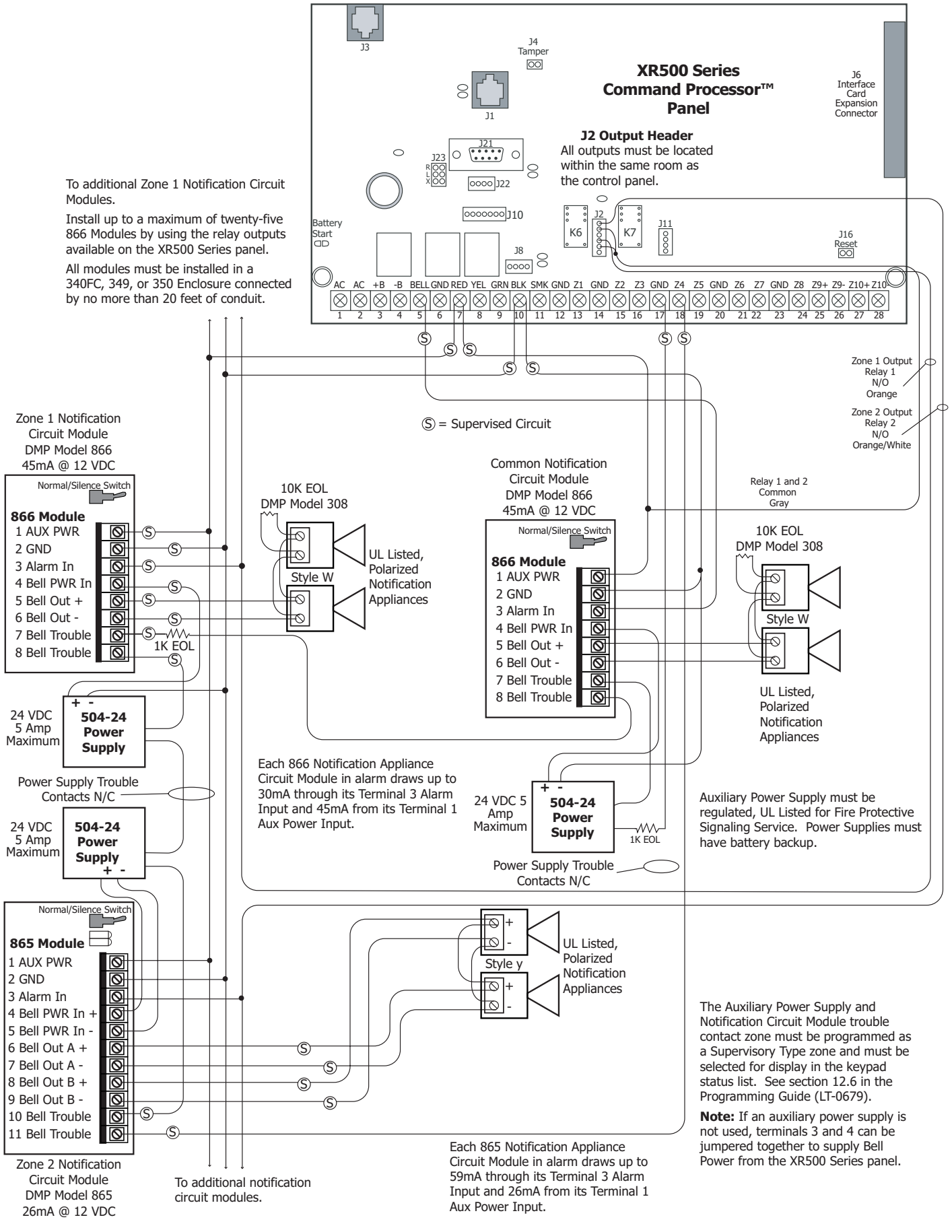
In addition, the SCS-101 Network Line Card installed in the SCS-1R Receiver must have the ACK Substitution Message programmed as NO.

Wiring Diagrams

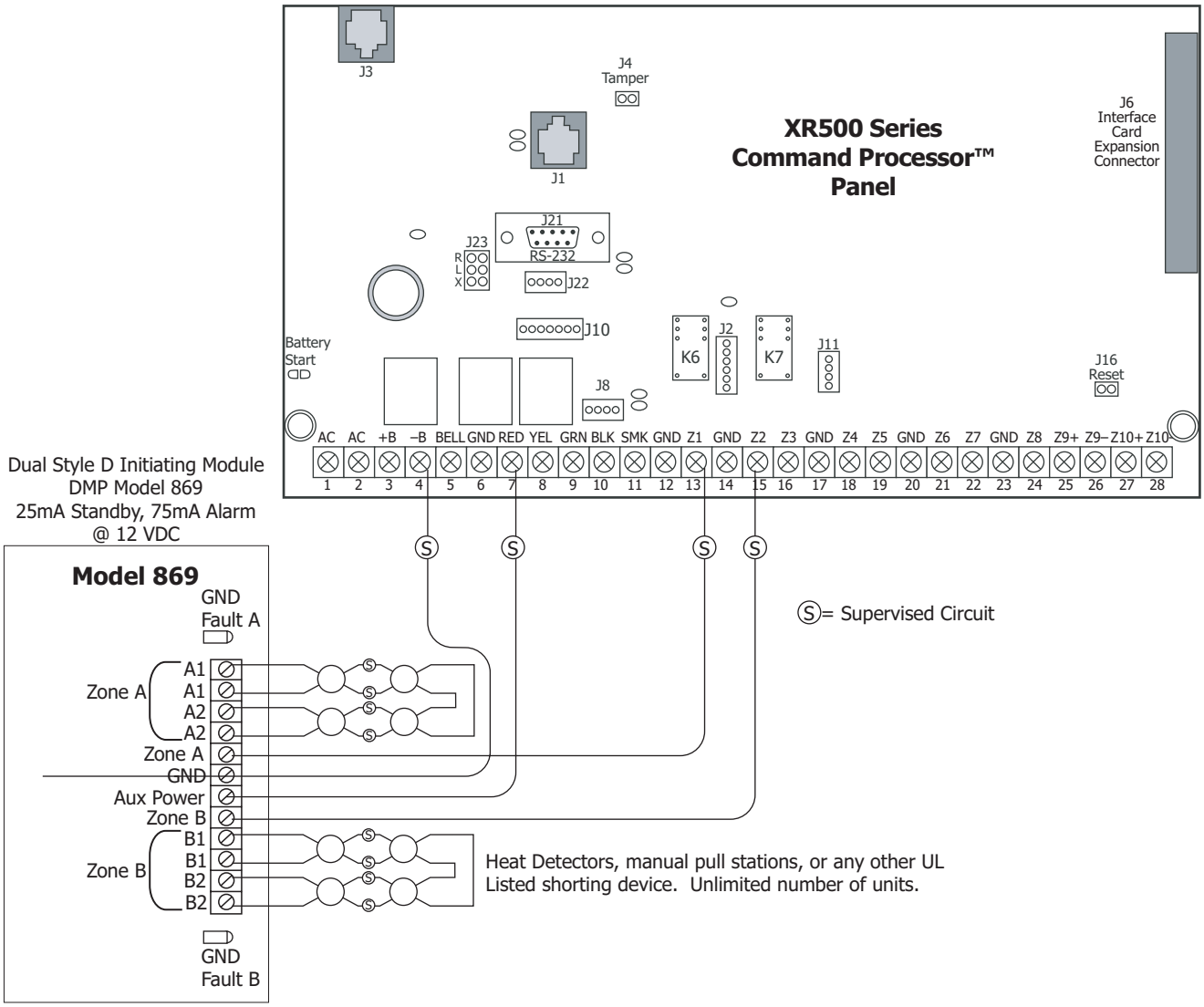
36.1 Multiple Notification Circuit Modules


XR500 Series
Command Processor™
Panel
Battery
Start
AC AC +B –B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 GND Z7 GND Z8 Z9+ Z9– Z10+ Z10–
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
J3
J1
J4 Tamper
J21 RS-232
J22
J23
J10
J8
J2
K6
K7
J11
J16 Reset
J6 Interface Card Expansion Connector
Ⓢ = Supervised Circuit
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list. See section 12.6 in the Programming Guide (LT-0679).
Each 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from its Terminal 1 Aux Power Input.
UL Listed, Polarized Notification Appliances
Style Z
Auxiliary Power Supply must be regulated, UL Listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
Note: If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the XR500 panel.
Power Supply Trouble Contacts N/C
+ - Auxiliary Power Supply
24 VDC 5 Amp Maximum
Notification Circuit Module
DMP Model 865
25mA @12 VDC
Normal/Silence Switch
865 Module
1 AUX PWR
2 GND
3 Alarm In
4 Bell PWR In +
5 Bell PWR In -
6 Bell Out A +
7 Bell Out A -
8 Bell Out B +
9 Bell Out B -
10 Bell Trouble
11 Bell Trouble
To additional 866 Notification Circuit Modules. Up to a maximum of twenty-five 866 Modules on the XR500 Series panel. All modules must be installed in a 340FC, 349, or 350 enclosure connected by no more than 20 feet of conduit.
Optional Notification Module Installation
Each 866 Notification Appliance Circuit Module in alarm draws up to 30mA through its Terminal 3 Alarm Input and 45mA from its Terminal 1 Aux Power Input.
UL Listed, Polarized Notification Appliances
Style W
10K EOL
DMP Model 308
1K EOL
Power Supply Trouble Contacts N/C
+ - Auxiliary Power Supply
24 VDC 5 Amp Maximum
Notification Circuit Module
DMP Model 866
45mA @12 VDC
Normal/Silence Switch
866 Module
1 AUX PWR
2 GND
3 Alarm In
4 Bell PWR In
5 Bell Out +
6 Bell Out -
7 Bell Trouble
8 Bell Trouble

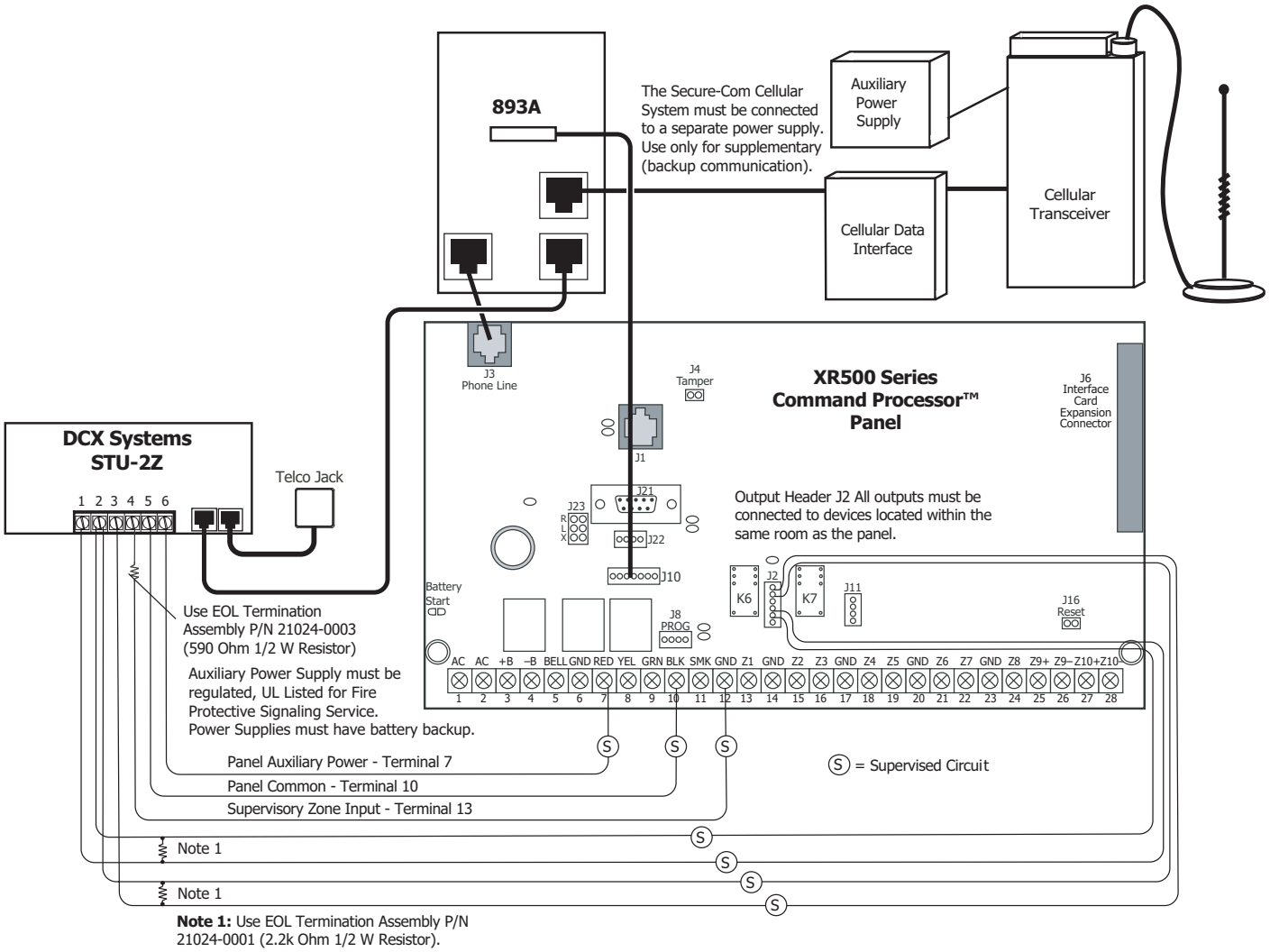
36.2 Multiple Notification Circuit Modules for Zoned Annunciation


XR500 Series
Command Processor™
Panel
J2 Output Header
All outputs must be located within the same room as the control panel.
J3
J4 Tamper
J1
J6 Interface Card Expansion Connector
J21
J23
J22
J10
J2
J11
J8
K6
K7
J16 Reset
Battery Start
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
To additional Zone 1 Notification Circuit Modules.
Install up to a maximum of twenty-five 866 Modules by using the relay outputs available on the XR500 Series panel.
All modules must be installed in a 340FC, 349, or 350 Enclosure connected by no more than 20 feet of conduit.
Zone 1 Output Relay 1 N/O Orange
Zone 2 Output Relay 2 N/O Orange/White
Relay 1 and 2 Common Gray
Ⓢ = Supervised Circuit
Zone 1 Notification Circuit Module DMP Model 866 45mA @ 12 VDC
Normal/Silence Switch
866 Module
1 AUX PWR
2 GND
3 Alarm In
4 Bell PWR In
5 Bell Out +
6 Bell Out -
7 Bell Trouble
8 Bell Trouble
1K EOL
10K EOL DMP Model 308
Style W
UL Listed, Polarized Notification Appliances
Common Notification Circuit Module DMP Model 866 45mA @ 12 VDC
10K EOL DMP Model 308
Style W
UL Listed, Polarized Notification Appliances
24 VDC 5 Amp Maximum
504-24 Power Supply
Power Supply Trouble Contacts N/C
Each 866 Notification Appliance Circuit Module in alarm draws up to 30mA through its Terminal 3 Alarm Input and 45mA from its Terminal 1 Aux Power Input.
Auxiliary Power Supply must be regulated, UL Listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
865 Module
1 AUX PWR
2 GND
3 Alarm In
4 Bell PWR In +
5 Bell PWR In -
6 Bell Out A +
7 Bell Out A -
8 Bell Out B +
9 Bell Out B -
10 Bell Trouble
11 Bell Trouble
Style y
UL Listed, Polarized Notification Appliances
Zone 2 Notification Circuit Module DMP Model 865 26mA @ 12 VDC
To additional notification circuit modules.
Each 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from its Terminal 1 Aux Power Input.
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list. See section 12.6 in the Programming Guide (LT-0679).
Note: If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the XR500 Series panel.

36.3 Dual Style D Zone Module Installation



36.4 Cellular Backup Installation for Derived Channel Burglary


893A
The Secure-Com Cellular System must be connected to a separate power supply. Use only for supplementary (backup communication).
Auxiliary Power Supply
Cellular Data Interface
Cellular Transceiver
J3 Phone Line
J4 Tamper
XR500 Series Command Processor™ Panel
J6 Interface Card Expansion Connector
J1
DCX Systems STU-2Z
1 2 3 4 5 6
Telco Jack
J21
J23
J22
J10
Output Header J2 All outputs must be connected to devices located within the same room as the panel.
J2
K6
K7
J11
J16 Reset
Battery Start
J8 PROG
Use EOL Termination Assembly P/N 21024-0003 (590 Ohm 1/2 W Resistor)
Auxiliary Power Supply must be regulated, UL Listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
AC AC +B –B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9– Z10+Z10
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Panel Auxiliary Power - Terminal 7
Panel Common - Terminal 10
Supervisory Zone Input - Terminal 13
S = Supervised Circuit
Note 1
Note 1
Note 1: Use EOL Termination Assembly P/N 21024-0001 (2.2k Ohm 1/2 W Resistor).

Interfacing STU-2Z/STU-4Z to the XR500 Series Panels

The STU-2Z or STU-4Z may only be used in conjunction with telephone systems that support DCX Systems Derived Channel multiplex network. The STU-2Z or STU-4Z can only be installed in a DMP Model 350 enclosure.

Burglary

The STU-2Z and STU-4Z are cross listed with the XR500 Series panels as an accessory for Standrd Central Station Burglar Alarm. For Standard line security, the following conditions must be met:

- The panel must be installed and programmed to meet Standard line security burglary alarm system requirements.
- The panel must be installed and programmed for reporting all alarm conditions through the integral DACT to the same central station that monitors the STU-2Z or STU-4Z.
- The STU-2Z or STU-4Z must be mounted in the panel enclosure and wired according to Section 32.4 above.
- Once installed, the central station must enable 2-minute off-hook polling of the STU-2Z or STU-4Z.

Supplementary Reporting (for Commercial Burglar Alarm Applications)

The two zones of the STU-2Z or the four zones of the STU-4Z may be used for supplementary reporting by meeting the following requirements.

1. Program Relay Output #1 for all alarm conditions that are required to report alarm on Zone 1 of the STU-2Z or STU-4Z.
2. Program Relay Output #2 for all alarm conditions that are required to report alarm on Zone 2 of the STU-2Z or STU-4Z.
3. Wire the normally-open terminals of Relay Output #1 to Terminal 1 of the STU-2Z or STU-4Z.
4. Wire the common terminal of Relay Output #1 to Terminal 2 of the STU-2Z or STU-4Z.
5. Wire the normally-open terminal of Relay Output #2 to Terminal 3 of the STU-2Z or STU-4Z.
6. Wire the common terminal of Relay Output #2 to Terminal 2 of the STU-2Z or STU-4Z.

Commercial Fire

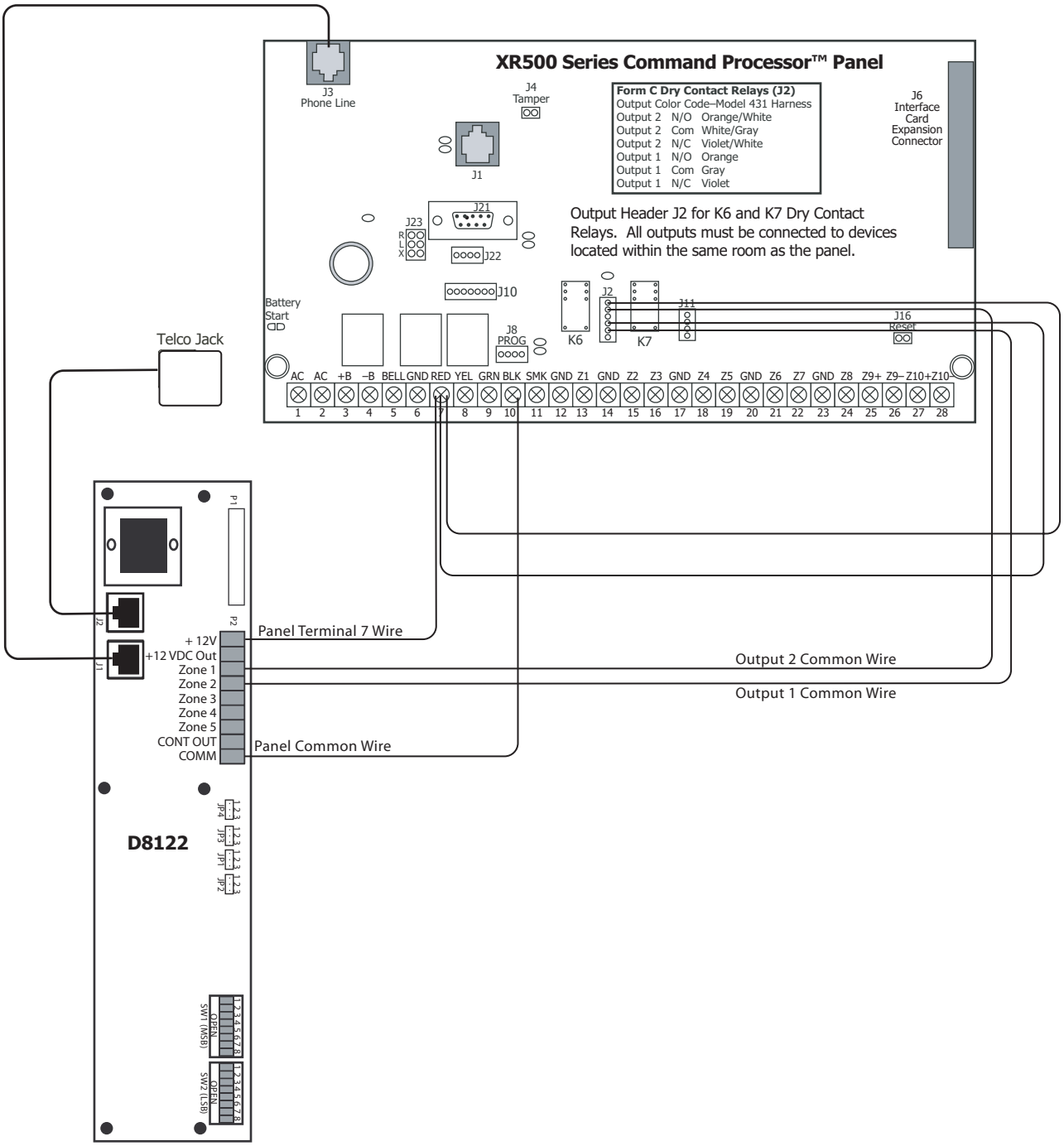
When the XR500 Series panel is used as a Central Station Alarm Commercial Fire System with one telephone line, in conjunction with DCX Systems STU-2Z or STU-4Z, the following conditions must be met:

- The panel must be installed and programmed to meet commercial fire (reporting) systems requirements.
- The panel must be installed and programmed for reporting all alarm conditions and trouble conditions to the same central station that monitors the STU-2Z or STU-4Z.
- The STU-2Z or STU-4Z must be mounted in the panel enclosure and wired according to Section 32.4 above.
- Once installed, the central station must enable 2-minute off-hook polling of the STU-2Z or STU-4Z.

Installing the STU-2Z/STU-4Z into the DMP Model 350 Enclosure

The STU board is mounted in the left side of the DMP Model 350 enclosure by slipping the optional corner mounting bracket over the edge of the enclosure. Use DCX Part # 27074-002 (2Z) or Part # 27078-001 (4Z). Connect the STU power wires and telco cables to the panel terminals and RJ31X as shown in Section 32.4 above.

36.5 Derived Channel Installation Using Bosch D8122

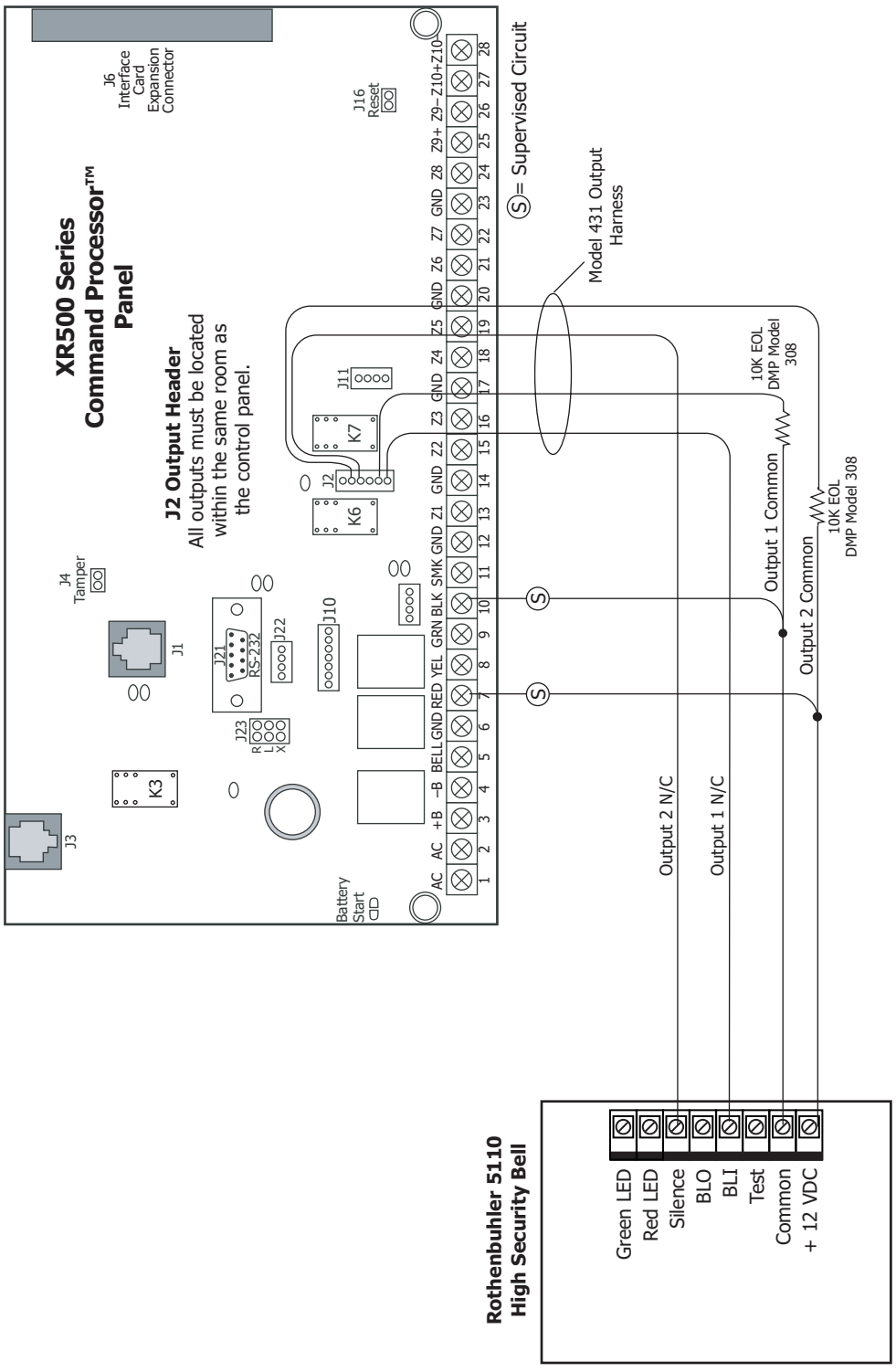


Interfacing D8122 to the XR500 Series Panels

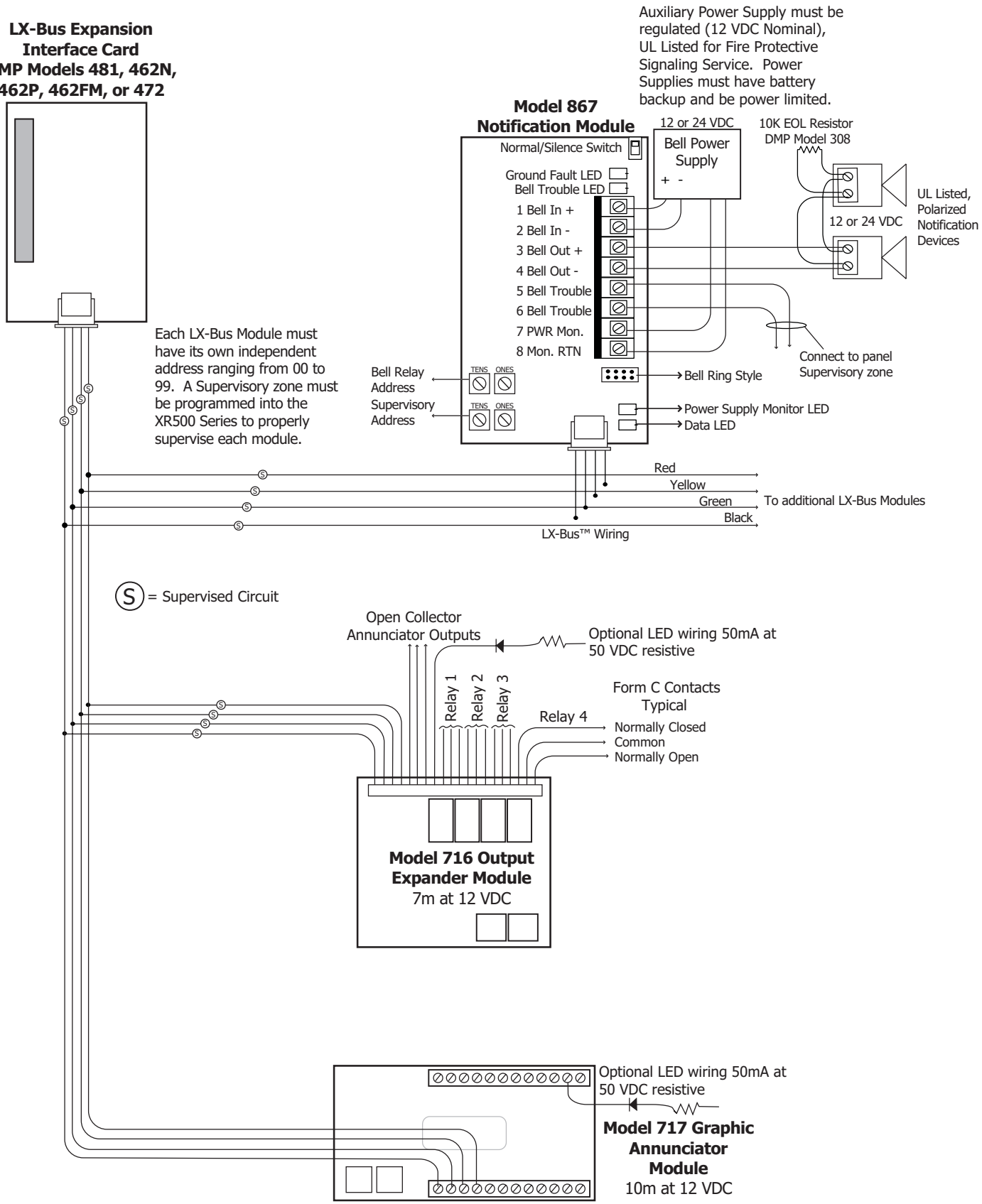
The D8122 may only be used in conjunction with telephone systems that support Derived Channel network. For installation instructions, see the Derived Channel STUD8121A/D8122 Operation and Installation Guide.

- For Standard Line Security applications, the panel must be installed and programmed to meet burglary alarm system requirements.
- The panel must be installed and programmed for reporting all alarm conditions through the integral DACT or network connection to the same central station that monitors the D8122.
- The D8122 must be installed in the same enclosure as the XR500 Series panel using the supplied mounting hardware. Refer to the STUD8121A/D8122 Operation and Installation Guide.
- Derived Channel Communication is not applicable for ULC Canadian Installations.

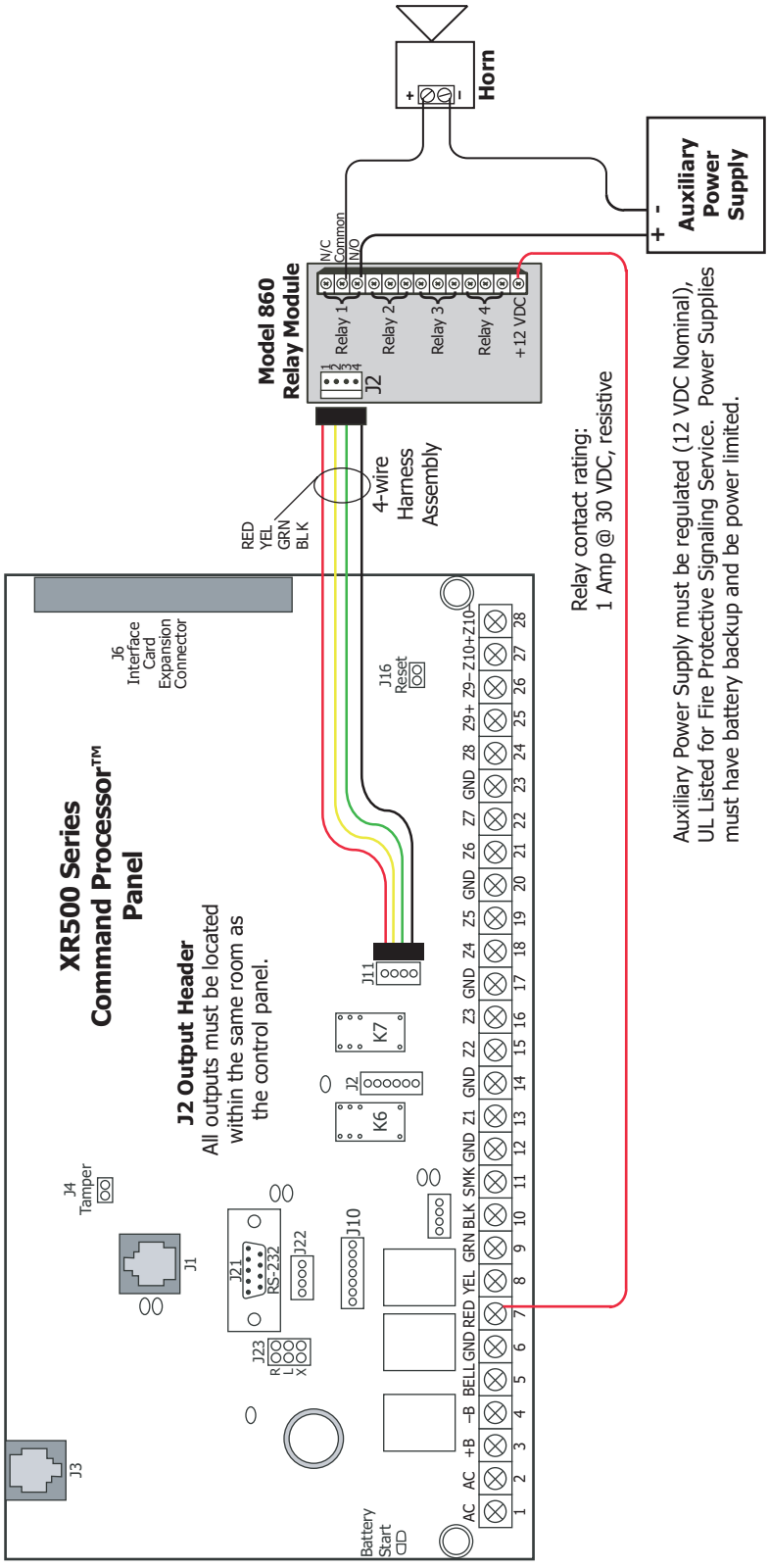
36.6 Rothenbuhler 5110 High Security Bell Wiring



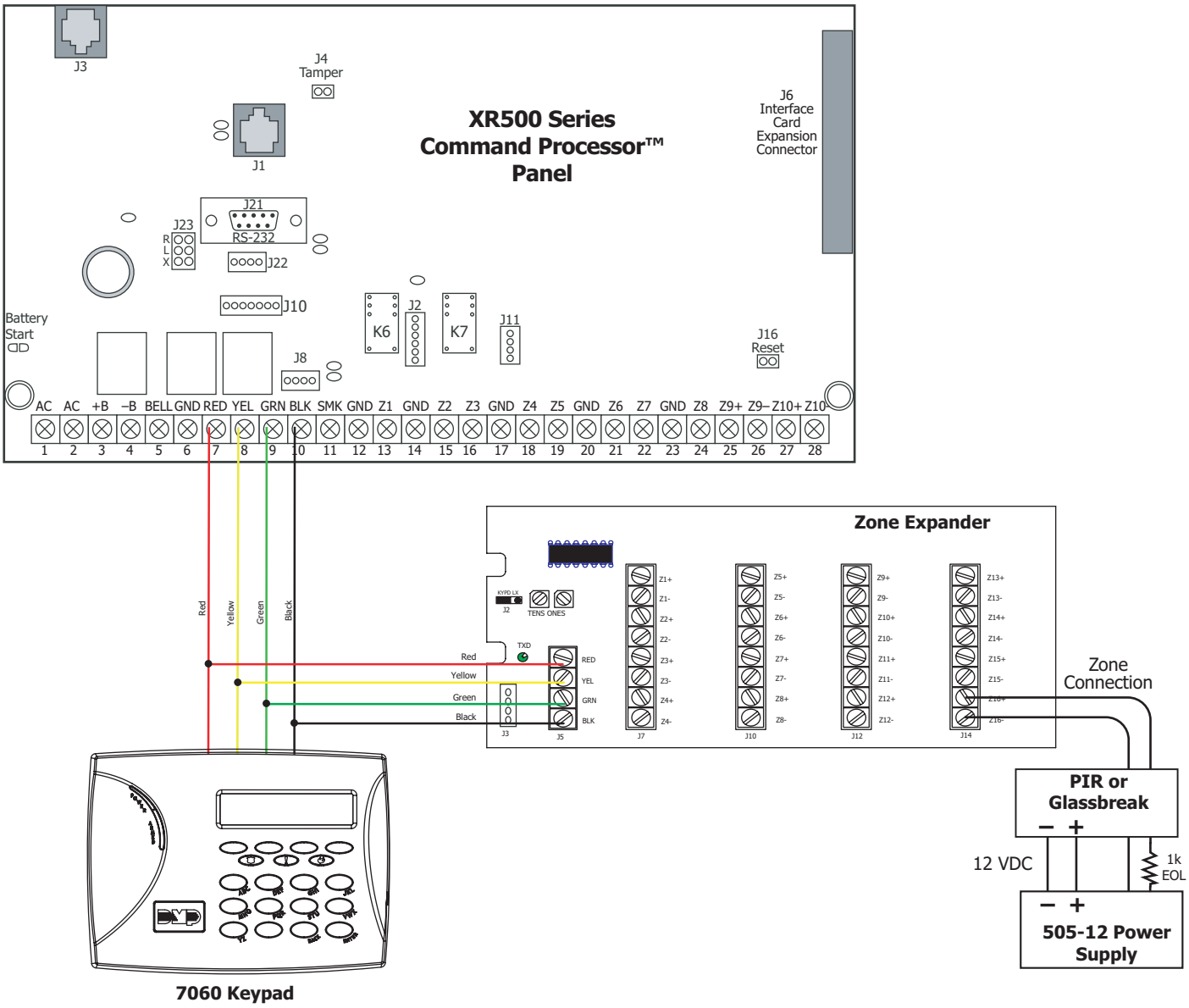
36.7 LX-Bus™ Module Connection


LX-Bus Expansion Interface Card DMP Models 481, 462N, 462P, 462FM, or 472
Auxiliary Power Supply must be regulated (12 VDC Nominal), UL Listed for Fire Protective Signaling Service. Power Supplies must have battery backup and be power limited.
Model 867 Notification Module
12 or 24 VDC
Bell Power Supply
+ -
10K EOL Resistor DMP Model 308
UL Listed, Polarized Notification Devices
12 or 24 VDC
Normal/Silence Switch
Ground Fault LED
Bell Trouble LED
1 Bell In +
2 Bell In -
3 Bell Out +
4 Bell Out -
5 Bell Trouble
6 Bell Trouble
7 PWR Mon.
8 Mon. RTN
Connect to panel Supervisory zone
Each LX-Bus Module must have its own independent address ranging from 00 to 99. A Supervisory zone must be programmed into the XR500 Series to properly supervise each module.
Bell Relay Address
Supervisory Address
TENS
ONES
Bell Ring Style
Power Supply Monitor LED
Data LED
Red
Yellow
Green
Black
To additional LX-Bus Modules
LX-Bus™ Wiring
S = Supervised Circuit
Open Collector Annunciator Outputs
Optional LED wiring 50mA at 50 VDC resistive
Relay 1
Relay 2
Relay 3
Relay 4
Form C Contacts Typical
Normally Closed
Common
Normally Open
Model 716 Output Expander Module
7m at 12 VDC
Optional LED wiring 50mA at 50 VDC resistive
Model 717 Graphic Annunciator Module
10m at 12 VDC

36.8 Model 860 Relay Module Connection



36.9 Powered Burglary Devices



Revisions to This Document

This section explains the changes that were made to this document during this revision. This section lists the date the change was made, the section number and heading, and a quick summary of the change.

Ver.	Section Number and Heading	Summary of Changes
1.03	23.10 Model 463G CELL Only, Standard Line Security	Added programming option and reference to Encrypted Line Security
	23.11 Model 463G CELL with Dialer Backup, Standard Line Security	Added programming option and reference to Encrypted Line Security
	23.12 Model 463G NET with CELL as Alternate Primary and Dialer Backup, Standard Line Security	Added programming option and reference to Encrypted Line Security
	23.13 Model 463G NET with CELL as Backup and Adaptive Primary, Standard Line Security	Added programming option and reference to Encrypted Line Security
	26.10 Model 463G CELL Only, Standard Line Security	Added programming option and reference to Encrypted Line Security
	26.11 Model 463G CELL with Dialer Backup, Standard Line Security	Added programming option and reference to Encrypted Line Security
	26.12 Model 463G NET with CELL as Alternate Primary and Dialer Backup, Standard Line Security	Added programming option and reference to Encrypted Line Security
	26.13 Model 463G NET with CELL as Backup and Adaptive Primary, Standard Line Security	Added programming option and reference to Encrypted Line Security
1.02	3.4 Accessory Devices	Added 463G Digital Cellular Communicator
	6.8 Power Requirements	Added 463G Digital Cellular Communicator
	22.7 Wireless Audible Annunciation	Added section
	23.9 Wireless Audible Annunciation	Added section
	23.10 Model 463G CELL Only, Standard Line Security	Added section
	23.11 Model 463G CELL with Dialer Backup, Standard Line Security	Added section
	23.12 Model 463G NET with CELL as Alternate Primary and Dialer Backup, Standard Line Security	Added section
	23.13 Model 463G NET with CELL as Backup and Adaptive Primary, Standard Line Security	Added section
	24.3 Wireless Supervision Time	Revised to 240 minutes
	24.8 Wireless Audible Annunciation	Added section
	26.9 Wireless Audible Annunciation	Added section
	26.10 Model 463G CELL Only, Standard Line Security	Added section
	26.11 Model 463G CELL with Dialer Backup, Standard Line Security	Added section
	26.12 Model 463G NET with CELL as Alternate Primary and Dialer Backup, Standard Line Security	Added section
	26.13 Model 463G NET with CELL as Backup and Adaptive Primary, Standard Line Security	Added section
	31.7 Wireless Supervision Time	Revised to 240 minutes

Listings and Approvals

FCC Part 15

FCC Part 68 Registration ID CCKAL00BXR500

NIST Validated XR500E Encrypted Command Processor Panel Certificate #130

California State Fire Marshal (CSFM)

New York City (MEA)

ANSI/SIA CP-01-2000 False Alarm Reduction

Underwriters Laboratories (UL) Listed

ANSI/UL 294	Access Control System Units
ANSI/UL 365	Police Connected Burglar
ANSI/UL 609	Local Burglar
ANSI/UL 636	Holdup Alarm Units and Systems Accessory
ANSI/UL 1023	Household Burglar
ANSI/UL 1076	Proprietary Burglar
ANSI/UL 1610	Central Station Burglar
ANSI/UL 1635	Digital Burglar
ANSI/UL 985	Household Fire Warning
ANSI/UL 864	Fire Protective Signaling

UL Bank, Safe, and Vault

UL Standard Line Security

UL Encrypted Standard Line Security

Underwriters Laboratories Canada (ULC) Listed

ULC 5545	Household Fire
ULC Subject-C1023	Household Burglar
ULC/ORD-C1076	Proprietary Burglar
ULC S304	Central Station Burglar

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